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# China Report

AGRICULTURE

No. 149



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30 June 1981

## CHINA REPORT

## AGRICULTURE

No. 149

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**ERRATUM:** In JPRS 78294 of 15 June 1981, No 145 of this series, on page 42, in the third paragraph of the article entitled "Outlook for Summer Grain, Rapeseed Discussed" the figure "270 million mu" should be corrected to read "27 million mu."

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# I. GENERAL INFORMATION

## BREEDING PADDY RICE FROM POLLEN SAID SUCCESSFUL

Shanghai KEXUE ZHONGTIAN /SCIENTIFIC FARMING/ in Chinese No 3 Mar 81 p 58

[Article: "Important Achievement in Breeding Paddy Rice From Pollen Is Realized in Our Nation"]

[Text] Breeding paddy rice from pollen is an effective way to hasten selective breeding of new varieties of paddy rice and creating new types of paddy rice. Our nation's breeding of paddy rice from pollen began in 1970. For the past 10 years, massive research has been conducted in the techniques of cultivating pollen, the culture base and the conditions of the culture. Achievements have been outstanding. In the mid-1970's, our nation was the world's first to successfully breed a batch of new varieties and new lines of paddy rice with better bumper harvest characteristics (a total of 81 up to the present time). Those propagated over 10,000 mu are "Xinxiu," "Wan geng 959," and "Tong hua No 2." Those propagated over 10,000 mu are "Hua yu No 1," "Xian hua No 1" and "Huang ke No 1" and others totaling seven varieties. In recent years, our nation combined the technique of cultivating pollen with other new techniques of breeding paddy rice and the results of cultivating new varieties and new lines of paddy rice have been more outstanding. In the hybridization and breeding of distantly related paddy rice varieties, because of the application of techniques of pollen cultivation, sterility and instability of separation of the hybrid offspring of distantly related parents were effectively overcome. Pollen cultivation techniques were used in the hybridization of xian and geng rice, and the intermediate type of varieties and lines "Zhong hua No 5," "Zhong hua No 14" and "Wan geng 76057" which possess xian and geng characteristics have been successfully obtained. In the study of hybrid paddy rice, pollen cultivation techniques were used to rapidly stabilize hybrid offspring generations, and the new lines of "Nan hua No 1," "Nan hua No 11," "78-494" and "79-694" hybrid paddy rice were successfully bred.

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CSO: 4007/411

OIL BEARING CROPS RESEARCH INSTITUTE DUTIES, PROJECTS REPORTED

Shanghai KEXUE ZHONGTIAN [SCIENTIFIC FARMING] in Chinese No 3 Mar 81 pp 21-22

[Article] by the Scientific Research Department of the Oil Bearing Crops Research Institute of the Chinese Academy of Agricultural Sciences: "The Oil Bearing Crops Research Institute of the Chinese Academy of Agricultural Sciences"

[Text] The Oil Bearing Crops Research Institute of the Chinese Academy of Agricultural Sciences was established in 1960 at Baojian, Wuchang Ward, Wuhan City.

The institute is a specialized national research organization specializing in the research of oil bearing crops. Its basic duties are: 1. to study the important scientific and technological problems of how to greatly increase the yield and quality of oil bearing crops and increase labor production; 2. to strengthen basic work and theoretical studies in a big way, to apply new techniques, new methods to continuously increase the level of scientific research, and to organize and coordinate national coordinative and cooperative research; 3. to collect and grasp related scientific and technological information at home and abroad, to develop international exchange and cooperation in science and technology, to organize academic activities, to compile and publish related theoretical works.

The institute now has 98 scientific and technical personnel, six research laboratories studying resources of varieties, genetic breeding, cultivation physiology, micro-organisms in soil and fertilizers, plant protection, and oil quality, and an information room, library and editorial office. Its publication is the CHINA OIL BEARING CROPS (quarterly). Its experimental farm has nearly 800 mu of cultivated land. The institute has an administrative office, a scientific research administrative office, a support department and a personnel department.

For 20 years, the institute insisted on connecting theory with practice. It carried out a lot of research work and organized and coordinated national coordination and cooperative research and has served greatly in developing production and scientific research of oil bearing crops. It has also preliminarily established a specialized research team of more complete scientific disciplines.

The major research achievements are as follows: Under the joint efforts of related units, a coordinative and cooperative management system for the collection of resources of varieties of oil bearing crops of our nation and their preservation was established, and the index of the resources of the varieties of such crops as rape, soybean, sesame and the book of varieties are being compiled and published.



Over 20 varieties have been bred successfully and have been popularized over large areas in production. The important ones among them are: rape varieties "Ganyou No 3," "Ganyou No 5;" soybean varieties "Edou No 2;" sesame varieties "Zhongzhi No 5" and "Zhongzhi No 7;" peanut varieties "Ehua No 2" and "Ehua No 3." Through evaluation and purification, a batch of superior indigenous varieties have been popularized such as "Hou zi mao" and "Ai jiao zao" soybean varieties; "Yi yang bai" sesame; "Xie gang qing" peanut. The cultivation technique of producing high yields of rape of the triple crop in paddy fields centered around cultivation of large and strong seedlings for transplanting has realized visible results in production. For example, the average unit yield of rape in Guangji County in Hubei Province increased from 63 jin in 1977 to 216 jin in 1980. Last year, it was included as a key item for demonstration and popularization by the Ministry of Agriculture. Research in the prevention of the disease of shrinking and not filling of rape discovered the cause of the disease and the method of prevention. This has served importantly in popularizing cabbage type rape varieties and developing the production of rape. The nitrogen fixing efficiency of the root nodule bacteria of the "009" and "97-1" varieties of peanuts selectively bred has reached the world's advanced levels. It has organized related units within the nation to conduct research projects and has served to guide the production and scientific research in developing oil bearing crops.

The key points of the research work of the institute in the near future are:

1. research in developing zoning the planting areas of oil bearing crops in a big way to provide a basis for rapidly increasing the production of oil bearing crops;
2. further broadening the collection of resources of varieties of various oil bearing crops at home and abroad, closely related wild grown plants and new plant resources that provide oil sources, carrying out systematic and in depth research, providing materials for breeding of new varieties of oil bearing crops for selective breeding suitable for modernized agricultural production;
3. on the basis of continuing to increase the yield and the ability to resist adversity of oil bearing crop varieties, emphasis is placed on improving the quality of the seeds and research in increasing the oil content;
4. research in the patterns of high yields of major oil bearing crops and mechanized cultivation techniques;
5. combining related topics, developing research in the basic theory of genetics and physiology of major oil bearing crops;
6. strengthening compilation of information and publishing work.

The scientific research direction of our institute during the present stage is to link theory with practice, to combine specialized research and scientific experiment of mass nature, study and solve major scientific and technical problems in the production of oil bearing crops in our nation, and strengthen basic work and theoretical research, emphasizing improvement.

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## NATIONAL

### POLLUTANT DANGERS OF IRRIGATION WATER, FERTILIZERS REVIEWED

Guangzhou HUANJING [ENVIRONMENT] in Chinese No 3, 30 Mar 81 p 7

[Article by Ma Junfeng [7456 1498 1496], Shenyang Municipal Environmental Protection Office: "Protection Against Pollution in the Spring Planting Season"]

[Text] When spring returns to the land, and all living things revive, the busy spring planting season is not far off. There is a considerable scientific basis for proper agricultural use of water and fertilizer.

Let us start with water. Water is the lifeblood of agriculture, and without it no crop could survive. The sources of agricultural water, in addition to natural precipitation, are subsurface water, river water and urban waste water. The harmful components of any polluted water can gradually accumulate in agricultural crops as a result of many years' irrigation. If people eat them for many years, their health will be harmed. Because cadmium-containing waste water was used in Japan to irrigate rice paddies, producing large amounts of cadmium containing rice, the people who ate it suffered from the "aching disease" that shocked the world.

It is easy for people to understand that river water and municipal waste water can be polluted by the industrial "three wastes"; but it may be harder for people to accept that idea that well water and other subsurface water may also be polluted to a degree that makes it unusable for irrigation. But extensive experience instructs us that well water must also be stringently protected. Surveys in Shenyang municipality in recent years indicated that because well water used in irrigation was polluted, more than 10,000 jin of vegetables were not fit to eat. Such instances have been numerous. In 1979, the well used for irrigation by a certain production team became polluted with chromium, so that all of the vegetables they grew contained it. Cabbage contained 5.2 mg/kg of chromium, and every kg of spinach contained 6 mg of it. Both were unfit to eat.

The harmful constituents of municipal waste water are much more complex. The waste water contains large quantities of ammonia, nitrogen, phosphorus and potassium which are beneficial for plant growth, which is welcomed by the peasants. But it should also be realized that the waste water contains large quantities of harmful heavy metals, and if used it may pollute grains and vegetables. Surveys indicate that some rice irrigated with waste water contains more than

1 mg/kg of cadmium, equivalent to the level in the area subject to the "aching disease" in Japan. The rice in some areas contains levels of arsenic which exceed our country's public health standard for food products. Accordingly, extreme care should be used in irrigating agricultural fields with waste water; it should be scientifically managed, and must be treated and chemically analyzed before use. Waste water which does not meet state standards for irrigation must not be used on the fields.

Now let us discuss fertilizer. There is an agricultural proverb that: "Planting without manure is blind groping". The saying is correct. As science has advanced, agricultural production has not been limited to farmyard fertilizers, but has come to use increasing quantities of chemical fertilizers. Although chemical fertilizers can produce increased yields, they also have an unfavorable aspect. For example, ammonium sulfate can introduce large quantities of the sulfate radical into the soil, producing hardpan, or it can percolate down to the ground and pollute water sources and increase water hardness. Accordingly, the proper quantities of chemical fertilizer should be used.

Many areas, particularly south of the Yangtze, are accustomed to using river and canal sludge as a fertilizer. We believe that using river sludge is like using municipal waste water: it has both advantages and disadvantages. Sludge contains heavy metals, generally in much higher concentrations than in waste water, and accordingly the pollution of agricultural crops which it produces is even graver. The following test was made in Shenyang City: sludge was mixed with ordinary soil in different proportions in a greenhouse and used to grow 250 trays of cabbage, rapeseed, celery, spinach and radishes. It was discovered that the cabbage was rather seriously polluted with mercury; 60 percent of it contained levels exceeding state health standards for foodstuffs. The cadmium pollution was second only to that of mercury. The cadmium content of the cabbage was roughly equivalent to 15 percent of the soil cadmium content. The other vegetables also contained differing amounts of mercury, cadmium, lead, arsenic and other harmful materials.

Thus it can be seen that although sludge has a certain fertilizing effect, it can produce rather grave pollution of grains and vegetables. The heavy metals in the sludge usually accumulate in the stalks and leaves of plants, and the stalks and leaves of vegetables are the parts which are used for food. Accordingly, sludge should not be used indiscriminately as a fertilizer, and its use on vegetables should be particularly strictly controlled so as to prevent harmful substances from entering the body through foodstuffs and harming health.

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## NATIONAL

### REFORESTATION OF BARREN LAND IN GUANGDONG DESCRIBED

Guangzhou HUANJING [ENVIRONMENT] in Chinese No 3, 30 Mar 81 pp 2-4

[Article by Zeng Xianhui [2582 2009 6548]: "Changing Sandy Hills to a Treasure House"]

[Text] In this hilly coastal region of western Guangdong Province, where bare hills and slopes are visible everywhere, the Xiaoliang Water and Soil Conservation Experiment and Popularization Station in Dianbai County is an eye-catching patch of green which has attracted the interest of many eminent scientists in this country and abroad and has been selected by the United Nations as one of the "man and the biosphere" scientific research bases.

#### A Manmade Catastrophe

The Xiaoliang Soil and Water Conservation station is different from other "man and the biosphere" scientific research bases in our country; while Mount Changbai and Mount Dinghu still preserve a portion of the virgin forest granted by nature, in the 1950's part of Xiaoliang Prefecture was nothing but bare soil.

Actually, for many generations Xiaoliang Prefecture was entirely covered by forest. According to reminiscences of old people from the prefecture and the evidence of tree roots remaining underground, as late as 100 years ago the area was covered by pine or mixed forests. Afterwards, when the rulers fell, the trees were cut down and the denuded soil was eroded for a century by the south's characteristic torrential rains, which removed a meter or more of soil in all, or more than 10,000 cubic meters of soil per square km per year. By 1957, when the soil and water conservation station was set up, there were 1,537 slide locations and 207 erosion gullies on the station's 26 hills and 7,650 mu of land. The topsoil humus content was below 1.5 percent, and soil nitrogen, phosphorus and potassium were insufficient. On summer days the surface temperature reached 60° C, while in the evening it fell rapidly to 20°. The soil was completely incapable of retaining rain water, so that it became dried out if it did not rain for a few days, and when it did rain, mud and sand were washed into the nearby fields, a phenomenon that was known as the "tiger of the fields." Rice yields were only about 100 jin per mu, and in some cases not a single grain was harvested.



More than 100 years ago, when people greedily looked for immediate gain, and indiscriminately cut trees on this land, nobody could have predicted that they would leave to posterity ruined hills in whose soil no grass grew, over which no birds flew, and on which not even an ant could survive. Whenever the sun set in summer, both sky and land were crimson, and the dry and lowering air was nearly stifling, creating an extremely bleak and desolate scene. This was a catastrophe created by an ignorance of ecology.

#### **An Arduous Path**

If a blighted environment such as that in Xiaoliang Prefecture were not remade, it would be impossible to develop agricultural production, and it would gradually encroach upon the surrounding farmland and change it into waste land. The reasoning was quite simple: to expand agriculture it was first necessary to improve the environment there.

But could an environment ruined by human social activity recover through human efforts? An examination of the soil and water conservation work in Xiaoliang is extremely instructive.

In its efforts to improve the environment over the last 23 years, the station has had successful experience and lessons of failure. In its first two years, the station staff concentrated on building embankments to hold back the sand, check dams, "fish scale pits," contour trenches and other engineering works, undertaken with little coordination with biological measures, so that the works were generally washed away and the results were poor. Later, they adopted a comprehensive approach based on afforestation, and after long experience they found and summarized a complete set of experiences, including: combinations of engineering works and biological measures based on local conditions and on the particular kinds of damage; the combination of concentrated measures, continuous measures and repair of gullies and of slopes; and a transition from low-level forest to high-level forest and a combination of short-term and long-term returns, thereby achieving excellent results.

This is a brick-red soil region on the edge of the tropics, and if it lacks forest cover serious erosion results. The soil has already been returned to its original physical and chemical condition, and if the process continues, there is a danger that it will turn into a red desert. But in order to restore the various living things in this blighted environment, water is a critical factor. Without trees there can be no water, while without water, trees will not survive. Accordingly, it is first necessary to plant trees and keep them alive, so that the arid tropical situation will gradually revert to a moist tropical situation, creating the conditions for restoring and developing the various living things.

However, afforestation was far from easy here. Initially they were eager for easy results and quick success and used the "one hoe, one seedling" method of planting; but the seedlings all died. It turned out that because the topsoil lacked organic matter and organisms, there were almost no pores and capillaries in it, so that water could not penetrate it, and subsurface moisture could not

be transported to the surface. The soil moisture content 40 centimeters deep was only 8 to 9 percent, so that when the hoe method was used there was no hope of keeping a tree alive. To deal with this climatic and soil characteristic, they changed this crude and simple method for the method of digging large holes (40 cm wide, long and deep), dug contour trenches (60 cm wide and deep and 20-30 meters long), and used different measures in accordance with the different topography and types of trees; when planting bendo eucalyptus they used the method of raising the seedlings in beds, which they grew up and formed a forest. When planting lemon eucalyptus, they raised the plants in nutrient pots. On eroded slopes they selected and planted half-year old masson pine or terraces of Chinese fan palm. In silted bottom land they planted carambola and other fruit trees. And along the edges of check dams they planted *Acacia confusa*. Their procedure was to introduce the narrow-leaved drought-resistant varieties such as longyuan eucalyptus and masson pine as first-stage, vanguard trees which covered the surface and made some initial improvements in the soil's water absorption and retention capability and its structure. Then, they gradually proceeded to a higher stage semitropical monsoon evergreen broadleaf forest.

When the above measures were adopted, the Xiaoliang station's tree survival rate exceeded 90 percent. Beginning their transplanting in 1959, by 1965 more than 7,000 mu of bare hills were already covered with bendo eucalyptus, horsetail beefwood, masson pine and bamboo (subsequently part of the forest area was assigned to local communes, so currently there is 4,700 mu). After 1965 they expanded to more than 600 mu of lichees, carambola, banana, pepper, Chinese fan palm and other economic trees. By 1969 they were self-sufficient.

Since 1973, they have introduced more than 170 foreign trees and herbs and have successfully raised 200 mu of mixed broadleaf high forest trees and shrubs. In this mixed forest, *Autocephalus chinensis*, spinulose tree fern, olive, baige [4101 2706], large-leaved *Acacia*, Sargent gloryvine (*Sargentodoxa cuneata*), rattan palm, *Annona villosa* and mixed grasses completely shade the ground surface with layer upon layer of green leaves. In this 200 acres of broadleaf mixed forest, we saw the beautiful prospect of restoring an excellent environment in Xiaoliang prefecture: as long as they persist in arduous struggle for a number of years, they have very good prospects of completely restoring the tropical forest.

### Gratifying Results

During the 23 years of arduous struggle, Xiaoliang prefecture has undergone a fundamental change in its natural appearance, soil quality, climate and economic benefits, producing gratifying results. In the past, Xiaoliang was like a number of broken bricks cast into a wasteland, while today it has become an area of green. When one drives through here in an automobile, the atmosphere that comes to meet him is fresh and slightly moist. To the eye it already looks like a small forest. Among the mixed pine and eucalyptus forest, with a canopy density of 50 to 70 percent, soil erosion has dropped from 10,000 cubic meters per square km per year to 3,000; the soil moisture content has risen from less than 10 percent to a figure of 20 to 26 percent, and the soil humus content has been increased to about 3.58 percent. On sunny days in summer, the surface temperature in the forest is only 35° C, some 25.8° lower than on the bare, exposed ground, while

the range of air temperature variation has decreased considerably. In both clear and rainy weather, the air in the forest has a relative humidity about 5 percent higher than on bare, exposed ground. Of course, in the 200 mu of broadleaf mixed forest conditions are much better than here. The soil conservation station's forests and crops are worth about 2 million yuan, and since 1969 the income from forest and agricultural products has been more than 100,000 yuan, exceeding 180,000 yuan last year.

The soil and water conservation station has long been sending people to nearby communes to help train technical personnel and guide their afforestation work. The improvement in the climatic and soil conditions has controlled silting of farmland and provided the conditions for establishing fields with high and steady yields, so that the yield from the nearby production team's rice paddies have increased from an initial 100 jin per mu to 500-600 or even 800 jin per mu.

In the past there were no birds or insects here, but now that there is a forest, the birds come to it to build nests and raise their young. In the topsoil of the broadleaf mixed forests, worms were the first to appear. The following interesting event occurred: the station introduced a group of tree fern seedlings and they suddenly discovered large numbers of noctuids which only ate the tree fern leaves. While they were worrying about this group of seedlings, large numbers of tropical spiders arrived and spun their webs in the nearby trees, rapidly catching and eating all the noctuids, which saved the seedlings. This story may seem a bit unusual, but in reality it reflects the objective natural laws of the ecological balance: the noctuids eat the leaves and the spiders eat the noctuids, while the trees also provide the spiders with a living environment. Of course, if there had not initially been a certain area of forest, so that the spiders had long since been able to establish themselves, when the critical time of the noctuid infestation arrived the spiders would not have come to the rescue.

Xiaoliang Prefecture has undergone a natural change lasting a century or more, from forest to bare ground and from bare ground back to an initial manmade forest; this change was not spontaneous, but resulted from human activity. People in the past had no knowledge of science and cut the forests entirely down, exposing posterity to the revenge of nature and to a great deal of hardship. Now that we have the superior conditions of socialism, and have further grasped the secrets of the natural world, by relying on the force of human society we can restore some of the ruined natural environment. The changes in Xiaoliang confirm this point, and this is a valuable aspect of Xiaoliang's experience. But the time required has been too long and the cost too high. Accordingly, while we affirm and disseminate the experience of Xiaoliang, the lesson that past destruction of the forest resulted in long-term harm and loss should make us who live at the present time wiser and more respectful of nature's laws, and should make us recover the damaged natural environment in a planned fashion and never again permit the pernicious practice of wantonly cutting forests.

## BRIEFS

PEASANT 'SIDELINE' OCCUPATIONS INCREASING--Beijing, 16 Jun (XINHUA)--A survey of 15,914 peasant households throughout China shows that their total income from sideline occupations in 1980 rose more than one-third over the previous year. The survey by the State Statistical Bureau found that total sideline income was 7.7 million yuan in 1980, 37.3 percent more than in 1979. Furthermore, each peasant surveyed a net income of 62.6 yuan from sidelines, 42.2 percent more than in 1979. Peasants in the survey harvested an average of 35.6 kilograms of grain, 0.13 kilograms of cotton, 1.94 kilograms of oil-bearing seeds, 6.5 kilograms of beet and sugar cane and 126 kilograms of vegetables each from private plots last year. Each household produced an average of 94.4 kilograms of pork, beef and mutton, 0.7 kilograms of wool and 11.5 kilograms of eggs. Each person sold 48.61 yuan worth of agricultural, forestry, animal husbandry, fishery and handicraft products to the state. [Text] [OW160810 Beijing XINHUA in English 0801 GMT 16 Jun 81]

CSO: 4007/459



## BRIEFS

**SUMMER CROPS**--This year Fengyang County, Anhui, expects to reap 250 million jin of wheat, a 26-percent increase over last year, and 10 million jin of rapeseed, more than 6 times last year's figure. This year the county planted 650,000 mu of wheat and 110,000 mu of rape. Fine strain wheat was planted on 370,000 mu of farmland. [OW150447 Hefei Anhui Provincial Service in Mandarin 1100 GMT 9 Jun 81]

**TEA HARVEST**--This year Anhui Province has reaped a bumper harvest of spring tea with total output topping last year by more than 10 percent. By the end of May, the province had procured 300,000 dan of spring tea, topping the same period last year by 72,000 dan, a 32-percent increase. This has increased tea farmers' income by 13 million yuan. She County, the largest tea-producing county in China, expects to procure 100,000 dan of tea in a quarter. [Hefei Anhui Provincial Service in Mandarin 1100 GMT 9 Jun 81]

**WHEAT HARVEST**--A bumper wheat harvest has been reported in Huaibei Plain, Anhui, on its 20.20.48 million mu of wheat fields. The average per-mu yield is 265 jin, marking an increase of over 20 percent compared with 1980. [OW152121 Hefei Anhui Provincial Service in Mandarin 1100 GMT 15 Jun 81]

**FLOOD REGIONS**--In implementing the related directives of the State Council and the Anhui Provincial CCP Committee, a responsible comrade of the Provincial CCP Committee and people's government recently made a 1-week inspection tour of the flood-prone regions in Bengbu and Huainan municipalities and Huaiyuan, Fengtai, Huoqiao, Yingchang, Funan and Linquan counties and held discussions with local cadres and masses on measures for clearing the Huai River to ensure safety during the flood discharge period. Party and government organs of municipalities and counties along the Huai River are making investigations and studies and formulating plans for improving conditions in disaster-prone regions. [OW152121 Hefei Anhui Provincial Service in Mandarin 1100 GMT 9 Jun 81]

**COUNTY DROUGHT MEASURES**--Hefei, 12 Jun (XINHUA)--Hao County, Anhui Province, has won a preliminary victory in combating the serious drought in the province since the latter part of last February. As a result, the county scored an all-time high record in both per-unit output and total output from its more than 1.3 million mu of wheat, and its more than 300,000 mu of tobacco, cotton, potato and other spring-sown crops are growing well. The victory is also attributable to the

county's action in putting responsibility for production on individual households, which has aroused the peasants' enthusiasm for building manually-operated wells, besides other means of combating drought. As of the end of May, the county has built more than 39,000 such wells. In addition, the lever-operated wells built in the county to combat drought have also played a major role in irrigating the county's 750,000 mu of soybean and corn. [OW160325 Beijing XINHUA Domestic Service in Chinese 0150 GMT 12 Jun 81]

CSO: 4007/459

## DEVELOPMENT OF AQUATIC PRODUCTION PLANNED

Fuzhou FUJIAN RIBAO in Chinese 5 Apr 81 p 1

[Article: "Grasp Science and Technology Well; Liberate Policy; Develop Fishery; The Provincial Aquatic Products Working Conference and Aquatic Products Science and Technology Conference Discuss Elimination of the 'Leftist' Influence and Develop the Superiority of Our Province's Aquatic Production"]

[Text] How can we rapidly develop our province's aquatic production at the present time when the resources of coastal and inner ocean aquatic products are dwindling, ocean catches are limited and the state's investments have decreased? This was the central topic of the provincial aquatic production working conference and the aquatic production science and technology conference and fishery economic policy discussion meeting held recently. The conclusion was that to develop fishery in these few years still depends on liberating ideology, eliminating the "leftist" influence and easing policy and grasping science and technology. This can lessen cost and do more work, further develop the superiority of our province's aquatic production and bring aquatic production a big step further.

The conference preliminarily reviewed and summarized the experience and lessons in our province's aquatic production since Liberation according to the spirit of the working conference of the Central Committee and the provincial committee. Delegates pointed out in discussions that our province's resources of aquatic products are rich, although a lot of achievements have been made in aquatic production work, but the speed of development has not been fast. Last year, the total fishery yield of the entire province was over 9.42 million dan, but per capita average was only 37 jin. Delegates believed the fundamental reason that our province's fishery has developed slowly is the long period of "leftist" influence. One, in execution of guidelines, fishery production was neglected; "fishery is number five, we can have it or we can get by without it." Two, in the commune and brigade systems, it was believed the larger the scale the better and the more public the ownership the better. Brigade accounting was implemented on an overall basis, and everything was overdone. Three, in production, commands were blindly issued, high goals were unilaterally pursued, "unlimited resources" were advocated, and it was believed that "where there is water, there is fish," contrary to the patterns of fishery production, "light floods were converted to big floods," traditional modes of operation were eliminated, towing and netting operations at the bottom of the sea were blindly developed. Four, in distribution, "equalitarianism" and "eating from the big pot" etc. were carried out. Many "old hands in aquatic

production" even said: In the past, there was a lot of "leftist" things in directing fishery production. In ocean fishing, the resources were not taken into consideration and the amount of the catch was not kept in mind, high goals were blindly pursued. Singular towing and netting operations at the bottom of the sea were popularized and the traditional fishing operations were abandoned. This caused serious dwindling of resources of the coastal and inner seas. Emphasis was placed on catching but preservation of freshness and processing were not emphasized. Each year, nearly a million dan of fish were lost. The collective was unable to utilize large expanses of beaches, and allowed them to remain unused and refused to allow individuals to use them to raise fish. Small fishing vessels and small nets of individuals were even labeled as capitalism and the small boats were docked on the shore or turned upside down under the sun. Such practices seriously damaged the enthusiasm of the fishermen. Massive labor forces in fishing areas had no outlets, the teams relying on loans for production increased, many fishery teams had less capital than loan obligations, the collective economy was weak and the life of fishermen was difficult.

The delegates also mentioned in their discussions that after the Third Plenum, the fishing regions purged the "leftist" influence and obtained preliminary results, and especially those poor teams, visibly changed their backward situation after the policy was eased.

The delegates conscientiously discussed the problems of implementing the production responsibility system in fishery. They believed our province's fishery production and operation are complex. The productivity and management level of each commune and brigade are not uniform, therefore, measures must be suited to local circumstances and according to the wishes of the masses to exercise many forms of the production responsibility system. The production responsibility system with a good foundation in collective economy and the production responsibility systems of "fixed quotas for reward and punishment" and "proportional distribution of profits" that have been practiced for many years should be continually perfected and made sound as long as the majority of the masses are satisfied. They should not be changed. At present, over 30 percent of the fishery teams throughout the province have implemented "overall contracts." This form basically coincides with the level of productivity of the present stage and the wishes of the masses. It should be stabilized and leadership should be strengthened. The extra labor force that the collective cannot provide work for should be allowed to come under the unified leadership of the brigade, and voluntarily combined. Capital should be solicited with one's own efforts to engage in fishing operations with traditional fishing rods and hooks and engage in fish cultivation or other industrial and sideline production but the principle of not destroying resources, not damaging the collective and not engaging in exploitation of labor should be adhered to. In addition, some fishing regions have less cultivated land. They should be allowed to practice contracting production work to the family and contracting work to the family.

"For fishery to develop rapidly, science and technology must take the lead." The delegates unanimously agreed that the "leftist" influence must be purged when they discussed the subject of developing scientific research in aquatic production. Everyone presented examples of "leftist" manifestations in scientific and technological work in aquatic production. One was misuse and inappropriate arrangement

of intellectuals. On the one hand, people complained that there were not enough scientific and technical personnel. On the other hand, some persons could not practice what they learned, and talent was wasted. The second was that during the "Cultural Revolution," many of the scientific and technical aquatic production units were abolished and have not been restored. There are still only a few personnel allotments. The third is that the living conditions of scientific and technical personnel and the scientific research facilities are poor. Everyone believed science and technology must progress first. This means the "leftist" influence must be purged. Science and technology of aquatic production must be placed in its appropriate position. Scientific and technical personnel should be employed daringly, and they should be allowed to realize many achievements and quick achievements.

During the conference, scientific and technical delegates conducted academic exchange and discussed scientific and technical plans for the period 1981 to 1985. At the conference, the aquatic production department praised and awarded 45 scientific and technical projects, the 14 collectives that have realized advanced scientific and technical work, and 61 advanced scientific and technical workers during the 4 years from 1977 to 1980.

At the conference, the provincial aquatic production department planned this year's aquatic production work, emphasized continuation in grasping well readjustment of fishing operations in coastal seas, development of fishery culture in aquatic production, doing well the work in the preservation of freshness and processing, which are the three key points of readjustment, to hasten the progress of development of fishery.

During the conference, leading comrades Xiang Nan [7309 0589], Guo Jian [6753 1696], Wen Xiushan [3306 4423 1472] and responsible comrades of the command headquarters of the East Sea Fishing Region of the National Aquatic Production Bureau heard general reports on the situation and spoke at the conference.

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## BRIEFS

GRAIN PURCHASE--By 4 June, Putian Prefecture in Fujian has purchased 10.64 million jin of spring grain and overfulfilled the purchase plan by 640,000 jin. [Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 10 Jun 81]

FUJIAN TREES--Fuzhou, 12 Jun (XINHUA)--Peasants in Fujian Province will be allotted an additional 1.333 million hectares of uncultivated hilly land to plant fruit and other trees, tea shrubs or grass. These plots will go to four million rural families. The decision to distribute the land was announced by Fujian's Deputy Governor Xu Ya, who is concurrently secretary of the Provincial Communist Party Committee, at a provincial forestry conference yesterday. Reclamation of the hillslopes to be distributed for growing food crops will be prohibited, added Xu Ya, as the new decision aims at boosting peasants' enthusiasm for tree planting. The national policy allows rural households to own the trees grown on their private plots and in and around their courtyards. Fujian Province has 8.666 million hectares of mountainous and hilly terrain. Uncultivated hillside area amounts to about 3.333 million hectares. [Text] [Beijing XINHUA in English 1237 GMT 14 Jun 81]

GRAIN OIL PRICE--Having implemented the party's economic policies, Fujian's rural areas have increased grain and oil output year after year. This year the grain and oil prices throughout the province are lower than last year. Statistics from the province's 24 major grain and oil markets show that from January to May, the average price for rice [weight unit not given] was 31.8 yuan, down 5.7 percent; wheat was 24.6 yuan, down 15 percent; dried sweet potatoes were 16.8 yuan, down 21.5 percent; and soybean, peanut and peanut oil prices were 3-4 percent lower. Last year production teams and peasants in the province sold more than 500 million jin of grain to the state at negotiated prices. To improve the people's livelihood, the province's grain departments have bought more than 90 million jin of glutinous rice, soybeans, peanuts, green beans and sorghum from other provinces and put them on the market to stimulate the economy. [Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 9 Jun 81]

COUNTY CROP, FISH--This year Guangze County, Fujian, has planted 6,700 mu of cash crops, topping last year by 1,000 mu, and has placed more than 700,000 fish fries into fishponds. [Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 9 Jun 81]

**LONG-HAIRED RABBITS**--The Fujian Provincial Agricultural Department, Foreign Trade Bureau, Women's Federation and Supply and Marketing Cooperative recently held a joint conference in Fuzhou municipality, Fujian, on raising long-haired rabbits in the province. In 1980, Fujian raised 1.38 million long-haired rabbits, an increase of 28.5 percent as compared with that in 1979. [Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 15 Jun 81]

**PLANT DISEASE CONFERENCE**--According to a FUJIAN RIBAO report, the Fujian Provincial Party Committee and people's government on 15 June held a telephone conference calling on all localities to strive to combat rice blast and other plant diseases. Xu Ya, secretary of the Provincial Party Committee and vice governor of Fujian, addressed the meeting. The meeting warned that the present rice blast could spread and become a big calamity. [Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 16 Jun 81]

**RELATIVELY GOOD HARVEST**--On the basis of three successive years of increased production, agriculture again achieved a relatively good harvest. The total grain output of provincial collectives and state farms was 15.463 billion jin, an increase of 262 million jin over last year. With the exception of a production decrease in peanuts, flue-cured tobacco and hemp, the production of all other major economic crops increased. Total sugar cane output increased by 7.91 percent; total tea leaf output increased by 13.45 percent. Forestry and animal husbandry also developed. Total output of the fishing industry increased by 4 percent. Total income from commune and brigade enterprises increased by 24.69 percent. The sideline industries of commune member households experienced relatively great development. State farms assiduously improved economic management and achieved new successes in making up deficits and increasing surpluses. [Text] [Fuzhou FUJIAN BAO in Chinese 10 Apr 81 p 1]

**SPRING FARMING**--After our province's rural villages implemented various production responsibility systems, the great mass of peasants distinguished themselves in spring plowing production. During the farming season, they transplanted early rice without mishap and engaged in intensive and meticulous farming. According to 14 April statistics of the provincial Bureau of Agriculture, the whole province had already transplanted 6.08 million mu, representing 57 percent of the plan for each prefecture and city. The seven counties and cities of Nanjing, Zhangping, Huanan, Jianou, Xunchang, Nanping, and Pingnan have basically completed the task of transplanting early rice. The spring planting area for soybeans, peanuts, and sugar cane has already reached 1.9 million mu. Compared with the corresponding period last year, an increase of 180,000 mu has been planted. 770,000 mu of barley, wheat, rape, broad beans and peas have already been harvested this spring, also representing an increase over the same period last year. Spring tea picking and dried bamboo shoots production are also getting under way in good time. [Text] [Fuzhou FUJIAN RIBAO in Chinese 15 Apr 81 p 1]

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GANSU

BRIEFS

DIVERSIFIED ECONOMY--Gansu Province's Wudu prefecture has concentrated its material and financial resources to increase the production of local brand-name products and promote the diversified economy. The 1980 output value of the diversified economy was 95 million yuan, a 23 percent increase over 1979. [SK171302 Lanzhou Gansu Provincial Service in Mandarin 1125 GMT 17 Jun 81]

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## BRIEFS

GUANGDONG SUGAR--The sugar refining season in Guangdong from 1980 to 1981 will be basically completed in late April. As of now, 1.009 million tons of sugar have been produced, reaching the highest level ever recorded. According to the statistics of the departments concerned, the areas sown to sugarcane in this refining season were reduced by 160,000 mu over the last refining season, yet output of sugarcane increased by 1.44 million tons, while cane sugar increased by 180,000 tons. During the current sugar refining season, the average per mu yield in the province is 3.5 tons, an increase of approximately one ton over the last sugar refining season. [Text] [Guangzhou NANFANG RIBAO in Chinese 25 Apr 81 p 1]

GOOD HARVEST--Rape, tobacco leaf, dryland grains, soybeans increase on the average by over 7 percent over last year. Under the unfavorable conditions of a continuous winter and spring drought, this year's provincial spring harvest still increased. Among which, rape output increased 10,000 dan over last year, an increase of 7.14 percent; flue-cured tobacco increased 41,400 dan, an increase of 34.64 percent; potato crops increased 28 million jin, an increase of 3.19 percent; dryland grains increased 20 million jin, an increase of 31.25 percent; soybeans increased 19,400 dan, an increase of 7 percent. Of the 13 prefectures and cities of the province, except for the 22 million jin increase over last year in spring harvested grain in Zhanjiang Prefecture, the remaining prefectures and cities, on the average, produced less as compared with last year's production, due to a decrease in area planted. [Text] [Guangzhou NANFANG BAO in Chinese 17 May 81 p 1]

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EFFORTS TO COMBAT 'SERIOUS' DROUGHT DESCRIBED

Extent of Affected Area

Shijiazhuang HEBEI RIBAO in Chinese 19 Mar 81 p 1

[Article by the Planning and Production Department of the Provincial Agricultural Committee: "Raise the Revolutionary Spirit; Grasp Drought Resistance Well With All Efforts; The Provincial Committee and the Provincial Government Proposed Five Measures Demanding That the Localities Grasp Closely and Well 'One Resistance and Two Protective Tasks in Farm Work' as the Central Task"]

[Text] The Hebei Province Committee of the Chinese Communist Party and the provincial government have demanded that the whole party and all the people be mobilized in face of the present serious drought and the arrival of the busy spring planting season to rapidly launch a high tide of drought resistance to protect the summer harvest and the spring sowing, to insist on doing the work of spring planting and production well and to achieve bumper harvests in agriculture for the whole year.

Drought is very serious in our province at present. Since February, the area affected by drought has expanded drastically. According to preliminary statistics, over 56 million mu of land has lost or lacks moisture, an increase of over 4 million mu since the beginning of the month. The drought this spring is a continuation of the extremely severe drought of last year. According to forecasts by the meteorological departments, rainfall during the first half of the year will be less than normal, making the drought more severe and directly threatening bumper harvests in the summer and timely spring sowing. On 8 February the provincial committee and the provincial government issued an "emergency notice on launching drought resistance work in a big way." After the announcement, many localities conscientiously carried out the work and made achievements. But there were still some localities that lacked sufficient understanding of the seriousness of the drought and were unclear about the situation. They did not see the whole picture and the leadership was not strong enough. Some leading groups were lazy and could not gather strong enough efforts. Some leading cadres acted superficially and relied on issuing instructions and holding telephone conferences to order drought resistance so as to satisfy the general campaign. Some waited for it to rain and did not make any moves. These problems have seriously affected the development of the struggle to resist the drought.

Now the busy season of spring planting has arrived. The wheat plants have entered the stage of turning green and require management. This is the first important battle to achieve a bumper harvest this summer. Doing the work of spring sowing well is the foundation for realizing overall bumper harvests for the entire year. Sufficient seeds must be planted and this must be done well in time. To carry out "one resistance and two protective tasks in farm work" well, the provincial committee and the provincial government have asked each locality to: 1) Mobilize all members of the party, concentrate forces, and grasp "one resistance and two protective tasks in farmwork" as the central task. Each level of leadership must overcome the thought of relying on fate and turn the thought of waiting for rain to fall from the sky around, further raise the revolutionary spirit, and exert every effort to undertake drought resistance well. Other work must be subordinate to and serve drought resistance, give drought resistance priority, and rapidly raise the high tide of drought resistance. 2) Each level must organize large groups of cadres to engage deeply in taking charge of the work in the fields, establishing a strict responsibility system, and actually solving the various problems affecting drought resistance. Building up the leading groups at the basic levels must be concretely strengthened so as to conscientiously solve the problem of laziness and weakness of some leading groups. Where the production responsibility system has already been established, it should not be changed back and forth. Those localities that have not established a responsibility system should be helped to establish such a system. The ideological and political work of the masses and cadres at the basic levels must be done well. Organization and mobilization must be carried out well together brigade by brigade. Each well must be inspected and drought resistant measures must be implemented on each piece of land so that drought resistance work can be concretely and firmly launched. 3) All usable capital must be concentrated and used for "one resistance and two protective tasks in farm work." Drought resistance funds must be quickly released, and special funds must be used for their specific purpose. Prepayment for agricultural sideline products must be quickly given to the brigades to support drought resistance. At the same time, each commune and brigade must carry out the purchase of chemical fertilizers properly and strengthen management of wheat. Those localities with deficient capital can apply for agricultural loans. Credit and loan departments must actively support poor brigades and carry out the work of drought resistance well in order to develop production. 4) The various water sources should be fully utilized and the use of water should be organized in a unified way so as to conserve water and overcome the drought. The management of mechanized wells must be strengthened, "the system of having a chief well keeper" must be popularized, trenches and ditches in fields must be dug properly to prevent seepage, and the gain of the mechanized wells must be improved. All damaged wells must be repaired one by one to join in the drought resistance. In dryland wheat fields where conditions are good, shallow wells and earth wells must be sunk to change "old fields" into irrigated wheat fields. Where there are no water sources, water must be carried in tanks on carts and in buckets by man. Each additional mu irrigated must count. At the same time, the various kinds of preparatory work for drought resistance and sowing must be done well. 5) Every profession and trade must be organized to support drought resistance and agriculture. Related departments must actively work to supply such drought resistant materials as diesel fuel, electricity and machinery. Each mass organization and people's group must actively participate in and support drought resistance in order to make new contributions to achieving bumper harvests in agriculture.

## Chengde, Cangzhou Prefectures

Shijiazhuang HEBEI RIBAO in Chinese 22 Mar 81 p 1

[Article by Zhang Shizeng /1728 1102 1071/ and Li Guoqun /2621 0948 5028/; "Enthusiasm To Resist Drought Is Raised in Chengde and Cangzhou Prefectures; Large Numbers of Cadres Go Deeply Into the Basic Levels To Help the Masses Study Measures To Solve Actual Problems"]

[Text] According to a 19 March report by the CHENGDE MASS, farm villages in Chengde Prefecture have raised enthusiasm to resist drought and to prepare for planting from one locality to another. Over 730,000 laborers throughout the entire prefecture have begun the work of drought resistance and preparation for planting. An area of 4.6 million mu of land has already been raked and packed, constituting 80 percent of the cultivated land of the collective. One hundred thousand mu of land have been irrigated and over 100,000 mu have been dug as row fields. Over 23,000 people have been trained as the backbone corps in spring sowing techniques. Seventy percent of the farmhouse manure has been sent to the fields.

As of 18 March, 10 major leading comrades of the administrative office and the local committee of Cangzhou Prefecture have led a large group of cadres of offices directly subordinate to the localities deeply into the basic levels to help commune brigades mobilize the masses to resist drought and protect summer harvests and spring sowing. At present, over 8,000 cadres of the counties and communes throughout the entire prefecture are working on the front line to resist drought, and initial enthusiasm to "resist one disaster and protect two aspects of farm work" has been aroused.

First Secretary Zhang Pingdong /1728 1456 2639/ and assistant director Yan Guojun /7051 0948 6874/ of the regional committee surveyed the work of resisting drought, irrigation and wells with motorized pumps at Zhangguanchun, Dulin and Dusheng Communes, and joined with the cadres and commune members in studying and establishing concrete measures to "resist one disaster and protect two aspects of farm work." Cadres of offices directly subordinate to the locality went deeply into the communes and brigades suffering from serious drought and greater difficulties in order to further implement the production responsibility system and to help them solve concrete difficulties regarding capital and material.

## Li County Activity

Shijiazhuang HEBEI RIBAO in Chinese 22 Mar 81 p 1

[Article by Ma Mingtong /7456 2494 6639/, Dai Yusi /2071 6735 1835/, and Xing Yanle /8580 1750 1861/; "Li County Exerts Great Efforts To Repair Wells With Motorized Pumps and Machinery; Over 200 Damaged Wells Have Been Repaired. Over 1,000 Diesel Engines Have Been Fixed"]

[Text] In view of the serious drought that is becoming worse day by day and the need to "resist one disaster and protect two aspects of farm work," Li County has launched widespread activities to repair damaged and abandoned wells and water-lifting tools. Up to the middle 18 days of March, 252 damaged wells have been repaired, over 26,000 mu of irrigated land have been improved, 1,560 diesel engines have been repaired, and 150 water pumps have been repaired, enabling a total of 5,495 wells to operate with complete sets of motorized pumps throughout the entire county.



After surveying and looking at the whole picture in this county, it was found that of the 5,490 wells with motorized pumps throughout the county, there were 595 wells that did not produce water or did not have 3 cun of water sufficient to pump for irrigation, leaving 60,000 mu of land without wells. Of the 5,490 diesel motors throughout the county, there were 3,555 units that needed repairs. In face of this situation, the county committee and the county revolutionary committee held many commune, brigade and cadre meetings to lecture on the importance of repairing machinery to combat drought and damaged wells, and they provided 30,000 yuan of mobile funds to subsidize the communes and brigades to repair the wells. The concrete method decided upon was that after the wells with motorized pumps were repaired and after the wells were inspected and approved by the county, commune and brigade, each well was given a subsidy of 40 to 60 yuan. The county water conservancy bureau also manufactured 21 sets of well repairing equipment such as that used in other places and issued one set to each commune. Each commune was required to provide one set to each brigade so that each commune brigade in the entire county had equipment to repair wells. Each commune brigade organized a well repair team and signed a contract with the production brigades to implement the contract work system. The rewards were calculated on the principle of greater reward for more work done. Regarding drainage and irrigation equipment, the county farm machinery management department organized four maintenance groups to go to each commune and brigade and repair machinery at four places.

#### Wuyi County Efforts

Shijiazhuang HEBEI RIDAO in Chinese 22 Mar 81 p 1

[Article by Yuan Hongen [5913 3163 1862] and Zhang Xijie [1728 6932 2638] "Wuyi County Implements the Cadre Post Responsibility System in Drought Resistance; Cadres of Communes and Brigades Change Their Style of Work to "Resist One Disaster and Protect Two Aspects in Farm Work" Enthusiastically]

[Text] Wuyi County has actively implemented the cadre post responsibility system in commune and brigades, clarified the scope of responsibility, determined the demands of the tasks, and implemented the system of having teams take charge of work in the villages and of managing wells. The cadres of the communes and brigades have high morale. Their enthusiasm for work has greatly increased. The entire county's work to "resist one disaster and protect two aspects of farm work" has developed rapidly. Enthusiasm for spring plowing and production is high. Statistics show that up to March 10, over 60,000 laborers had hoed 380,000 mu of wheat, delivered over 200,000 cubic meters of manure, and irrigated 35,000 mu of spring fallow land and wheat fields.

The leading members of the county committee and the county revolutionary committee separately went deep into the 18 communes and concretely helped the commune brigades to establish the cadre post responsibility system on a sound basis. Each commune clarified the tasks, time, quality, conditions for evaluation and comparison, and the reward and punishment system based on the duties of the cadres and the nature of work and capabilities to take charge of work in the fields, villages, and the duties of cadres of brigades and production teams at the localities and in managing wells. The enthusiasm of the cadres was mobilized and the sense of responsibility for work was strengthened. The six party committee members and 14 cadres of Sangcun commune

took charge of five fields in villages. Each person was in charge of one production team with poor conditions and one mechanized well to lead the drought resistance work of the entire commune. After over 10 days, over 4,000 mu were irrigated. At the same time, a change in the workstyle of the cadres was brought about, and the habit of absenteeism, indiscriminate transfer, wasting time speaking but not doing, and such superficial workstyle methods were changed.

Establishment of the cadre post responsibility system in the commune brigades advanced the establishment and perfection of the various production responsibility systems. Each cadre of the communes and brigades, in order to produce the best economic results in the fields, localities and wells of which he was in charge, actively implemented various forms of the responsibility system, and devoted attention to using policy to mobilize the enthusiasm of the masses. Of the 169 mechanized wells of the Chenquan commune, 133 wells were placed under different forms of the responsibility system in management and use and they were able to expand the area of irrigation by over 1,000 mu. With the post responsibility system, there were clear standards for inspection and evaluation, and determinations were made by cadres themselves during evaluation and comparison; everyone evaluated and discussed the results, and the advantages were learned to supplement the shortcomings; each learned from the other and each helped the other, the thoughts often meeting. The past practice of praising everyone when meeting face to face but criticizing everyone behind the back was changed and this led to a situation of political stability and unity.

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## DROUGHT RESISTANCE ACTIVITIES INCREASE

Shijiazhuang HEBEI RIBAO in Chinese 6 Apr 81 p 1

[Article by correspondent: "General Mobilization of the Entire Party and All the People; Every Profession Gives Support; Our Province's Drought Fighting Activity Forms High Tide; Over 54,300 Cadres of the Three Levels of the Locality, the County and the Commune Throughout the Province Have Gone Deeply Into the Front Line of Drought Resistance Under the Leadership of Each Level to Help Basic Level Organizations Grasp Mobilization of Ideology, Implementation of the Responsibility System, Key Measures of Drought Resistance, Solve Actual Problems in Drought Resistance, Push Forward the Rapid and Widespread Development of the Struggle Against Drought"]

[Text] Since the middle 10 days of March, our province's various localities have been faced with serious drought that has been developing on a daily basis. They have conscientiously implemented the urgent notice issued by the provincial committee and the provincial government to grasp well the work of "one resistance and two protections," taken forceful measures, mobilized the entire party and all the people, and have entered into a struggle against drought. At present, the entire province's drought fighting activities have already formed a high tide. As of the end of March, the entire province had 29.92 million mu of wheat fields which can be irrigated. Over 14 million mu have already been irrigated, and at the same time, sidedressing has been applied over 17.6 million mu, and over 21 million mu have been tilled. The entire province has over 52.3 million mu of spring fallow land, over 5.95 million mu have already been irrigated.

One visible characteristic of the province's drought resistance activity is that the leading cadres of each level had penetrated the front line of drought resistance, implemented face-to-face leadership, and concretely solved the actual problems in drought resistance. According to statistics, over 54,300 cadres from the three levels of the locality, county and commune throughout the province have penetrated the front line. The Shijiazhuang area organized cadres twice totaling over 8,800 cadres from the three levels of the locality, the county and the communes throughout the area. The Cangzhou regional committee asked each of its directly subordinate localities to assign one or two bureau level cadres and half of the departmental level cadres to remain and handle the bureau's work, the rest of the cadres were all assigned to drought resistance. The entire region's three levels deployed a total of over 7,700 cadres. The Hengshui area asked the chief and deputy chief of the four levels of the locality, county, commune and brigade to personally engage in drought resistance and the responsibility system and to take charge of

the county, the commune, the brigade. This was implemented on a wide scale. Of the ten assistant administrators and deputy assistant administrators of the Tangshan regional administrative office, six joined the local commissioner and the standing committee members to organize groups. Each group was in charge of one to two counties. The entire region dispatched over 5,000 cadres for drought resistance.

After the leading cadres of each level penetrated the front line, they conducted indepth surveys and studies, performed political and ideological work well, respected the autonomy of the communes and the brigades, concretely helped the basic levels solve the actual problems in drought resistance, pushed forward the rapid and widespread development of the struggle of drought resistance. The responsible persons of the Cangzhou regional administrative office went deeply into the Dacun Commune in Cang County and personally summarized the experience of contracting the mechanized wells of the Zhaoguanting Brigade and popularized the experience throughout the region. This increased the rate of utilization of mechanized wells in the entire region, and hastened the progress of irrigating the land. As of 27 March, 1.31 million laborers have joined drought resistance work throughout the region, over 940,000 mu of wheat fields has been irrigated, and daily progress has increased from the original 28,000 mu to 92,000 mu. After the cadres of each level of the Handan area went deeply into the basic levels, the struggle to resist drought was pushed forward by helping the basic levels implement the production responsibility system. Up to the present, 92.1 percent of the production teams of the entire region have implemented various forms of the responsibility system. From 19 to 25 March, over 830,000 mu of land was irrigated in one week, irrigating an average of 119,000 mu a day, an increase of onefold. The responsible comrades of the Xingtai local committee went deeply into Nangong County and discovered that many communes and brigades held the view of emphasizing cotton and neglecting wheat and progress in irrigating wheat fields was slow. Facing this situation, a discussion meeting of concerned leading comrades of the county and communes was held in time to lecture them on the importance and urgency of managing wheat well. The broad masses of cadres understood that the key to resisting drought at present is to irrigate wheat well and at the same time, irrigating empty land must be grasped well to assure timely spring sowing. Within 3 days, this county increased irrigation of the original 56,000 mu of wheat fields to 114,000 mu. The responsible comrades of the Langfang local committee led 25 leading comrades of related departments under its direct supervision to go to nine counties to help solve actual problems in drought resistance. One responsible comrade of the local committee and nine bureau level cadres went to Dacheng County and helped solve the three key problems of this county in the use of electricity for drought resistance, the supply of mechanized pumps and agricultural loans in time. Thus, a new situation rapidly emerged in this county's struggle in drought resistance. The local committee of Baoding exercised emergency measures to launch drought resistance on an overall basis and dispatched a group of capable cadres to go deeply into the poor teams and backward teams to solve the problem of the leadership, to help them grasp drought resistance first.

In guiding drought resistance work, each locality paid attention to implementing different types of leadership for different regions. The Handan area was divided into three types. The first type was practiced in Yongnian, Chengnan, and Lingzhang which are counties in the plains. The function of deep mechanized wells was fully developed with emphasis on establishing and making sound the mechanized wells



responsibility system, implementing shifts of laborers, continuous operation of machinery and irrigation day and night. For wells where the level of underground water has dropped seriously, motorized pumps were laid down. The second type was to mobilize the masses to utilize fresh water in deep wells and saline water in shallow wells to irrigate with mixed fresh and saline water in the counties of Quzhou, Qiuxian, Jize, Fexiang where there is more saline and alkaline land. The third was to utilize usable water sources to expand the irrigated area in as many ways as possible while mobilizing the masses to push carts and carry water in the hilly counties of She and Wuan, and Fengfeng Mines in mountain areas. Many commune brigades of the Fengfeng Mines negotiated with the coal mines to utilize over 20 water sources of the mines. Wheat fields covering 85,000 mu have already been irrigated.

Under the unified leadership of the party and the government at each level, each profession urgently took action and forceful measures to support drought resistance. In the Cangzhou area, concerned departments participated in the establishment of a drought resistance logistics group. They met once a day and solved the problems of diesel engines, chemical fertilizers, capital and use of electricity proposed by each county in time. The farm machinery, supply and marketing, commercial, agricultural and power departments of this region also organized four groups to support drought resistance and to enter deeply into each county. The Xingtai area appropriated a total of 2 million yuan for drought resistance funds. Recently, the local committee and the administrative office also called a meeting of the financial office, the agricultural committee, the commercial, supply and marketing and farm machinery departments to further study and solve the problems in drought resistance. It was decided that the localities should provide 500,000 yuan from their own finances to support those communes and brigades that have a huge and difficult task in drought resistance. At the same time, down payment of 8.86 million yuan for the purchase of cotton was rapidly provided.

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CSO: 4007/383

# WELLS OPENED, AREA OF IRRIGATED WHEAT FIELDS INCREASES

## Handan Area

Shijiazhuang HEBEI RIBAO in Chinese 8 Apr 81 p 1

[Article by Han Nongwei [7281 6593 3634] and Li Rishan [2621 2480 1472]: "In the Handan Area Sources Are Opened Up, Water Flow Is Conserved, the Area of Irrigated Wheat Fields Is Expanded"]

[Text] The Handan area is digging for various water sources, conserving the use of water, and using all kinds of ways to expand the area of irrigation. Up to the present, the entire region has irrigated 380,000 mu of spring fallow land and 1.76 million mu of wheat fields, constituting 73 percent of the total task.

Facing severe drought that is developing persistently, the leadership of the localities and counties in the Handan area has led large groups of cadres to go deeply into the front line of the struggle of drought resistance, to survey and study, to use all ways to open up water sources and conserve the flow of water, and to expand the area of irrigation. In the plains and areas suitable for wells, communes and brigades where mechanized wells are widely distributed, the tasks of establishing and making sound the mechanized wells responsibility system have been grasped tightly, management has been strengthened, the labor force has been placed on shifts, irrigation of land has been continuous day and night, and the gain of each single well has been improved. At communes and brigades where the level of underground water has seriously decreased, motorized pumps have been laid down on a widespread scale, thus increasing the range and increasing the amount of water. In the old irrigated regions on the banks along the Chang River, Fu River and Wei River, where water flow is blocked, the masses have been mobilized to dig canals in the rivers, sink wells in the rivers, set up temporary water lifting stations and points, and at the same time, commune members have been organized according to plan to seek brick wells, dig earth wells, using "indigenous" methods as the main methods to carry water in carts in a big way. Wei County changed from drawing the blocked flow of the Wei River to drawing and lifting the water reserve in Dongfeng Canal, dug a canal in the Chang River, used over 1,200 old brick wells, and expanded the area of irrigation of wheat fields by 350,000 mu. Communes and brigades in saline and alkaline regions established vacant wells that were simple and easy to build in an effort to overcome drought. They fully utilized fresh water of the shallow layers and skillfully used fresh water from the deep well and saline water from the medium and shallow layers and created a mixed flow of fresh and saline water. Without damaging the nature of the soil, the source of water was

expanded. The land of mounds and slopes west of the Beijing-Guangzhou Railway are seriously deficient in water. The masses were mobilized to carry water in carts and on their shoulders to fight drought.

To maximize the use of the limited amount of water for irrigation, the persons irrigating the land were assigned under a responsibility system to designated mechanized wells, given quotas for consumption of water, a fixed time for irrigation, and a fixed task. Quality was controlled and irrigating the fields with massive amount of water was stopped. Irrigation was even. In addition, work was carried out to stop leakage along ridges and trenches in the fields. Over 1 million meters of high standard cement boards have been laid in ditches in the fields to prevent leakage throughout the region. Many communes and brigades also made tile tubes and porcelain tubes for water ducts, some new mechanized wells were sunk and new pumps were installed at some wells, the ditches were lined with clay on a widespread scale to reduce water leakage, thus, the actual efficiency of irrigation was increased 10 to 20 percent, and irrigation in sandy soil increased 30 percent in efficiency.

#### Xingtai Area

Shijiazhuang HEBEI RIBAO in Chinese 8 Apr 81 p 1

[Article by Mao Renzhang [3029 0088 4545], Zhang Zhenghai [1728 2182 3189], Shi Shuming [4258 2579 2494], Du Guotang [2629 0948 1016]: "Xingtai Area Grasps Wheat in Paddy Fields As Key to Assure Bumper Harvests"]

[Text] In "one resistance and two protections," the Xingtai area grasped management of wheat in watered fields as the key. At present, the entire area has dispatched 1.29 million people to fight drought, 32,843 mechanized wells have begun operation, 37,992 diesel electrical generators have been used, 3.71 million mu of wheat plants in watered fields have been irrigated and 1 million mu have been irrigated twice.

They did some calculations: Managing well 3.71 million mu of wheat in watered fields can produce a per mu yield of 300 jin. In this way, the total yield of wheat in paddy fields will surpass the total summer yield of last year. After this calculation, they saw the potential of wheat in paddy fields to produce increased yield, and they affirmed their confidence in grasping "wheat fields as the key." The entire region transferred over 5,000 cadres to go deeply into the fields to tightly grasp wheat in paddy fields as the key to mobilizing the masses to resist drought and seize bumper harvests.

Facing this year's situation that less water is retained in the land and the underground water level has dropped, and the flow of water is insufficient, the local and county leadership of Xingtai organized the cadres and masses to sink 880 new wells, repair 1,850 old wells, and fitted motorized pumps over more than 700 wells. Over 20,000 mechanized wells that were only half full of water were fitted with pumps laid down. The amount of water flow was increased. One hundred-twenty kilometers of ditches that do not leak have been built. Small plots and garden farming have been popularized and irrigation with a massive amount of water has been overcome. The use of water for 3.71 million mu of wheat in paddy fields has

been assured. To mobilize the enthusiasm of the masses to manage wheat, this year, the experience of the responsibility system of wheat production of last year was summarized. Throughout the entire region, 95 percent of the production teams have separately established different forms of responsibility systems in wheat production involving contracting work to specialists, joint production down to the laborer, contracting production, cadres taking charge of work by families, contracting work according to quotas. The enthusiasm of the masses to resist drought and manage wheat has been mobilized. Xingtai, Shahe, Lincheng, Ningjin, Lingxi, Xinhe counties have implemented the responsibility system of joint production as the key in wheat production in paddy fields. This year, progress in wheat field management has been fast, and the quality has been good. After Baixiang County established the responsibility system, the commune members provided their own capital to purchase over 2,000 tons of chemical fertilizers, constituting 40 percent of the amount of fertilizers applied in the wheat fields.

#### Hengshui Area

Shijiazhuang HEBEI RIBAO in Chinese 8 Apr 81 p 1

[Article by Yuan Fuxing [5913 4395 5887], Zhou Lijun [0719 0500 6511]: "Hengshui Area Grasps Responsibility System Tightly; The Enthusiasm of the Masses to Resist Drought Is High"]

[Text] In the activities of one resistance and two protections, Hengshui area's party organizations at all levels have eliminated the influence of leftist ideology, conscientiously implemented various forms of the production responsibility system, mobilized the enthusiasm of the broad masses and cadres. According to statistics of 4 April, there were over 20,760 mechanized wells in operation, over 2,500 water lifting stations and points, 2.25 million mu of wheat fields have been irrigated, and 584,000 mu of spring fallow land have been irrigated.

In face of severe drought, each level of the party organization in the Hengshui area grasped eradication of the mistaken leftist influence and conscientious implementation of various forms of the production responsibility system as the key measure to do the work in drought resistance well. The localities, counties and communes dispatched over 6,000 cadres to go deeply into the basic levels to especially grasp well the implementation of various responsibility systems. Over 40,000 mechanized wells throughout the area were contracted to specialists, placed under the one reward for several quotas or independent accounting. Over 15,000 production teams implemented the wheat field management responsibility system. Individually poor teams implemented contracting production to the family or overall contracts to cadres. The establishment of the various production responsibility systems mobilized the enthusiasm of the masses and cadres. They insisted on scientific use of water, conservation of water, fully utilized presently available water sources, developed new water sources, actively built ridges and trenches that do not leak, and repaired old wells. Many commune members also took the initiative to invest capital to help the production teams sink wells and outfit wells. Other commune members sank brick wells and manually built vacant wells by themselves, changing dryland to irrigated land. In March alone, the entire region added over 2,800 units of water pumps. After Fucheng, Jing, Shen, Wuqiang implemented the production responsibility system, the enthusiasm of the masses

and cadres to resist drought rose dramatically. Commune members provided their own capital to sink water pressure vacant wells in the fields they are in charge of themselves to irrigate the land and the area of irrigated land expanded. Wuyi County is poor, its foundation is weak, and as the various production responsibility systems are implemented, the confidence of the masses and cadres to overcome difficulties and defeat the drought has become stronger and stronger. Commune members pooled 150,000 yuan in capital and repaired some damaged mechanized wells in time. Some teams also sank new wells. As of 4 April, the entire county's 260,000 mu of wheat have already been irrigated once.

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CSO: 4007/383



# SMALL NITROGEN FERTILIZER PLANTS IMPROVE ECONOMIC RESULTS

Shijiazhuang HEBEI RIBAO in Chinese 21 Mar 81 p 1

[Article by Zhang Zili [I728 1311 4539] and Zhang Wenguang [I728 2429 0342]: "In the Shijiazhuang Area, Small Nitrogen Fertilizer Plants Realize Reduction of Consumption and Increased Harvest Over Large Area; All of the 18 Small Nitrogen Fertilizer Plants in the Area Surpass Designed Capacity by Producing 1 Ton of Ammonia Using Less Than 2 Tons of Coal and Less Than 1,500 Kilowatthours of Electricity"]

[Text] Small nitrogen fertilizer producers in the Shijiazhuang area have launched activities to increase the yield through conservation and to increase harvests through conservation of expenditure and energy and reduction of consumption. Economic results have been improved on a widespread basis. The 18 small fertilizer plants throughout the region have a designed production capacity of 100,000 tons of synthetic ammonia a year. In 1980, the actual production was 120,000 tons. Production of each ton of ammonia consumed 1,906 kilograms of coal and 1,450 kilowatthours of electricity. A profit of 1.91 million yuan was realized. The profit without subsidy was over 2.89 million yuan. Last year the chemical fertilizer industry ranked first in the provincial evaluation and comparison competition.

Rational Starting of Machinery, Economic Operation: The 18 small nitrogen fertilizer plants in the Shijiazhuang area realized such good economic results primarily because they grasped the link of rational starting machinery and economic operation. They corrected the practice of each plant unilaterally pursuing production one by one, and studied each unit of machinery to see how the machinery could be started up rationally and operated economically. Each enterprise had its own indicators for quotas on operating the furnace, on operating the machinery, on production and on consumption. Irrational machinery was removed and extra operation was terminated so that each unit of equipment produced the results it should produce every minute. The Gaocheng County Chemical Fertilizer Plant found where a large amount of electric power was being consumed through measurements and balancing the work of the equipment. The constant voltage transformer system consumed over 500 kilowatthours of electricity per hour more than the added voltage transformer system. In the past, the plant had been afraid that production might be affected and had not dared to attack this problem. It criticized the leftist tendencies and eradicated the remnant poison, and stopped pursuing production unilaterally. The constant voltage transformer system was removed and 26 machinery units were shut down. In February last year consumption of the two types of coal to produce one ton of ammonia dropped from 1,600 kilograms to 1,500 kilograms. The amount of electricity consumed dropped from 1,600 kilowatthours

to 1,200 kilowatthours. The regional chemical industry bureau held a field meeting to popularize this experience. Each plant then conducted its own measurements and balancing of the work of the equipment. A total of 69 boilers, gas producing furnaces, icing machines, circulators, deep well pumps and over 150 units of other small machinery were shut down.

**Reorganization By Terminating Production, Conversion of the Backward:** This region exerted efforts to reorganize the backward enterprises. The backward enterprises were stimulated to advance and the advanced were stimulated to become more advanced. The Shenze County Chemical Fertilizer Plant's leading group was not united. Production was low, consumption was high, incidents occurred continuously, and the loss was serious. The regional chemical industry bureau's chief responsible comrade led the work of aiding reorganization. The bureau joined the Shenze County committee to investigate, and after one and a half months the production improved. The regional chemical industry bureau also dispatched three working groups to go separately to the Shulu, Xingtang, and Shenhou Chemical Fertilizer Plants to help carry out business reorganization and technical improvements. In particular, the Shenhou Chemical Fertilizer Plant improved from a backward plant to an advanced plant, greatly affecting the entire region.

**Strengthen Management, Emphasize Practical Results:** The small nitrogen fertilizer plants of the entire region strengthened scientific management and management of raw materials, technology, equipment and finances. The Jinxian Chemical Fertilizer Plant and several others also established economic accounting by contract for 1 year or several years without change. The Hutuo River Chemical Fertilizer Plant carefully and strictly managed raw materials and "clarified the three" items concerning the variety, quantity and quality of the coal. The coal pit classified the coal according to standard and specifications, separated the coal into appropriate piles and labeled the piles. The processing of coal was also standardized, and the coal was inspected and inventoried jointly by the plant, the chemical engineering shop, and the raw materials shop. To realize scientific management of the equipment and the technology, the bureau organized an inspection team to inspect the 320 units of equipment of each plant throughout the region and the 1,250-meter high-voltage lines. The problems that were discovered were solved to assure safe operation of the equipment. Now, the equipment and technological management of the 18 plants throughout the region have all basically reached this level, the equipment in operating condition has reached above 85 percent, the technological indicators reaching the level of competency have reached over 90 percent, and the leakage has dropped to below 2 per 1,000.

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BRIEFS

**COTTON SOCIETY INAUGURATED**--The provincial cotton society was inaugurated at a 4-day conference which proposed suggestions concerning technical problems of drought resistance, sowing and preservation of full seedlings of cotton in our province. Yesterday, the board of directors of the society was elected. The board of directors consists of influential experts, professors and comrades who have contributed towards cotton production in the province. It will organize and mobilize the enthusiasm of the broad masses of scientific and technical personnel and technical cadres, launch academic activities surrounding cotton production and serve as a good advisor to each level of leadership of our province's cotton regions. [Text] [Shijiazhuang HEBEI RIBAO in Chinese 9 Apr 81 p 1] 9296

**RED SPIDER MITES**--It was learned from the provincial agricultural crop disease and insect forecasting station yesterday that at present, the population of red spider mites in the wheat fields of the central and southern parts of our province is dense and the damage is becoming serious day by day. According to surveys, in one chi of single row ridge in the wheat fields, there are generally 200 to 300 mites, with a high of over 650 mites. Even on one wheat leaf, over ten red spiders have been found to cause damage. Recently, as the temperature rises and drought develops, wheat spider mites tend to cause more serious damage. Each locality should pay attention to strengthen survey, prevention and control of the wheat fields. [Text] [Shijiazhuang HEBEI RIBAO in Chinese 9 Apr 81 p 1] 9296

**NEW FARM CHEMICAL**--Our province's Kuancheng county science committee and the Kuancheng county porcelain plant No 2 jointly test developed successfully a new type of farm chemical--25% DDT suspenoid. Recently, the Chengde regional science committee invited 33 units from within the province and outside the province and the Ministry of Chemical Industry and Plant Protection Bureau of the Ministry of Agriculture to perform technical evaluation. The results show this type of farm chemical has the same killing power as the 25% DDT emulsoid but the cost is one third lower. It is relatively safe in storage, transport and use. It does not emit any pungent odor and it does not produce "three wastes" that pollute the environment. [Text] [Shijiazhuang HEBEI RIBAO in Chinese 9 Apr 81 p 1] 9296

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## BRIEFS

COUNTY GRAIN PRODUCTION--Xiangxiang County, Hunan, produced 738 million jin of grain in 1980, while its grain output in 1977 was 565 million jin. [Changsha Hunan Provincial Service in Mandarin 2300 GMT 11 Jun 81]

LIVESTOCK PARASITES CONTROLLED--Hunan Province achieved good results in expelling and destroying livestock parasites. In 1980, 265,000 cattle in 34 counties in western and southern Hunan received administering of anthelmintics. Pigs and sheep also received anthelmintics. The Ministry of Agriculture has issued to agricultural departments throughout the country a report prepared by the departments concerned in Hunan on livestock parasite prevention and control. [Changsha Hunan Provincial Service in Mandarin 2300 GMT 15 Jun 81]

CSO: 4007/459

## BRIEFS

**JIANGSU DROUGHT**--On 9 June and the morning of 10 June, the northern part of Jiangsu Province generally had urgently needed rains. The eastern part of Xuzhou Prefecture and the northern parts of Huaiyin and Yancheng prefectures received 40mm to 70mm of rainfall; the western part of Xuzhou Prefecture, southern part of Huaiyin Prefecture and the northern part of Yangzhou Prefecture had 20-40mm of rainfall, and the rest of Jiangsu had less than 20mm. Serious drought exists in the northern part of Jiangsu Province, particularly in the areas north of the Huaihe River, where people have not experienced saturating rains, except recent ones, since April or May. The recent rains helped to ease the drought in those areas. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 10 Jun 81]

**EARLY RICE**--Suzhou Prefecture, Jiangsu, has completed planting of 2 million mu of early rice. [OW150503 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 10 Jun 81]

**RICE FIELD MANAGEMENT**--By 5 June, Funing County, Jiangsu Province, has completed weeding and topdressing its 150,000 mu of early rice paddies. [OW150503 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 12 Jun 81]

**COTTON FIELD MANAGEMENT**--As of 12 June, Natong Prefecture, Jiangsu Province, has transplanted 2.5 million mu of cotton seedlings and topdressed 2.8 million mu of cotton fields. [OW150503 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 12 Jun 81]

**COTTON PRODUCTION**--Peasants in Xuzhou Prefecture, Jiangsu, have exerted tremendous efforts to combat drought and strengthen field management. As a result, the 700,000 mu of cotton in the prefecture is growing briskly. Cotton output in the prefecture hit an all-time high in 1980. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 15 Jun 81]

**RAPESEED HARVEST**--Luhe County, Jiangsu Province, reaped a bumper harvest of rapeseed with the total output exceeding 11 million jin this year, an increase of over 60 percent compared with 1980. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 15 Jun 81]

**COUNTY RAPESEED**--Kunshan County, Jiangsu, reaped good harvests of its 828,000 mu of rape, with the total output of rapeseed increasing by 40 percent compared with last year. Peasants are selling rapeseed to the state. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 10 Jun 81]

COUNTY RAPE HARVEST--Suining County, Jiangsu, has reaped a bumper harvest from its 110,000 mu of rape this year. The total rapeseed output tripled that of last year. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 9 Jun 81]

TEA PRODUCTION--Jiangsu Province has reaped 49,000 dan of spring tea, accounting for more than 44 percent of the annual tea production. [Nanjing Jiangsu Provincial Service in Mandarin 2300 GMT 11 Jun 81]

SHANGHAI SUMMER-RIPENING CROPS--A bumper harvest of summer-ripening crops has been reported in suburban Shanghai. According to a statistic, the average per-mu yield of wheat is 470 jin, close to that of 1980. The total wheat output in 1981 has been reduced by 10 percent as compared with that in 1980. The average per-mu yield of rapeseed is 260 jin, marking an increase of 10 percent as compared with that in 1980. The total rapeseed output in 1981 has been increased by 40 percent over the 1980 figure, an all-time high since liberation. [Shanghai City Service in Mandarin 2300 GMT 10 Jun 81]

SHANGHAI FLOOD-PREVENTION MEETING--Mayor Wang Daohan, Vice Mayors Han Zheyi, Chen Jinhua and Yang Di of Shanghai Municipality were present in a mayor's office meeting on flood prevention held on 13 June. The municipal government leaders heard reports made by the departments concerned on the progress made in preventing flooding in the city. The meeting noted that more efforts are needed to insure the city against flood. It warned that, despite weather forecasts of normal rainfall this year, it is likely that the city will come under simultaneous attack from typhoons, torrential rains and high tides in August and September. It called for removal or dismantling of obstacles and illegal structures along river dikes, shores and in the streets which block water drainage, and protection of flood control facilities against any damage, such as unauthorized digging of holes in river dike. [Shanghai City Service in Mandarin 1130 GMT 16 Jun 81]

CSO: 4007/459

## BRIEFS

**DIVERSIFIED ECONOMY MEETING**--The 8-day Jiangxi Provincial Conference on diversified economy in the countryside ended on 15 June. (Liu Zhonghou), deputy secretary of the Provincial CCP Committee, attended the closing ceremony. Wang Zhaorong, Standing Committee member of the Provincial CCP Committee and vice governor, delivered a summing-up report. In a governor's office meeting, Governor Bai Dongcai gave instructions that preparations should be made to insure the conference's success. On behalf of the provincial government, Vice Governor Zhang Guozhen delivered a report calling for serious efforts to develop a diversified economy in the rural areas. The conference called for full support of both the collective and the individual and the respective rural areas in developing diversified economy most suitable to them and highest in economic results. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 16 Jun 81]

**AGRICULTURAL PRODUCTION**--The situation in Jiangxi's rural areas is excellent. The total grain output of the province in 1979 and 1980 set all-time records and diversified farming operations also developed significantly. The total value of output from forestry, livestock breeding, sideline production and fishery now account for 32 percent of the total value of agricultural production. The value of output from diversified farming operations exceeded 400 million yuan last year. The output of spring grain crops this year rose by 20 percent and the output of rapeseed this year rose by 50 percent compared with last year. From January to April this year, the masses caught more than 511,000 dan of aquatic products, an increase of 28.9 percent compared with last year. Jiangxi's achievements are mainly due to the implementation of the principles and policies of the 3d plenary session of the 11th CCP Central Committee. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 12 Jun 81]

CSO: 4007/459

## BRIEFS

JILIN AGRICULTURE--Despite natural calamities, Siping Prefecture, Jilin Province, harvested 4.5 billion jin of grain and soybeans in 1980, compiling a growth rate of 14 percent in 3 consecutive years. Siping Prefecture marketed 1.35 billion jin of commodity grain in 1978, 1.73 billion jin in 1979 and 1.96 billion jin in 1980. Its percentage of forest cover increased to 19.75 percent in 1980 from 15.36 percent in 1977. Its per-capita income increased from 80 yuan in 1977 to 127 yuan in 1980. Its grain ration per capita was 581 jin in 1980. [SK200330 Changchun Jilin Provincial Service in Mandarin 1100 GMT 19 Jun 81]

CSO: 4007/459

## BRIEFS

PIC FEED RESEARCH--Beijing, 10 Jun (XINHUA)--Straw can be used as a concentrated feed for pigs and other animals by using a type of fungus, basidiomycetes, to increase the nutritive value of the fiber wastes, according to the GUANGMING DAILY. This method was developed by the Laboratory of Microbiology of Shandong University after many years' efforts by teachers under the guidance of professors, the newspaper reported. The fungus decomposes the cellulose of the straw up to 30 percent, lignin 25 percent, and protein increased by 8 to 11 percent. This method has been experimented with for several years in Tai'an County, Shandong Province and on the outskirts of the provincial capital Jinan. The GUANGMING DAILY said that pigs fed on the fodder are 15 percent heavier on the average than those which eat nondecomposed fodder. [Text] [Beijing XINHUA in English 1323 GMT 20 Jun 81]

SHANDONG RAINFALL--According to a report by the Shandong provincial weather station, rain fell in southwestern Shandong Province between 8 and 10 June. Linyi Prefecture, Zaozhuang municipality, most parts of Jining Prefecture, southeastern Heze Prefecture, Taian, (Xintai) and Wulian counties received much rainfall during this period, measuring 25-98 mm. Some counties in northern (Luxi) and Yantai Prefecture received precipitation measuring 10 mm and other localities 10 to 25 mm. [SK121444 Jinan Shandong Provincial Service in Mandarin 2300 GMT 10 Jun 81]

CSO: 4007/459



## SHANGHAI SUBURBS IMPROVING UNIT YIELD, DISEASE CONTROL

Shanghai KEXUE ZHONGTIAN [SCIENTIFIC FARMING] in Chinese No 3 Mar 81 pp 5-7

[Article by Yu Bingjun [5735 4426 6874] of the Shanghai City Bureau of Agriculture: "Experience of High and Stable Yields of Paddy Rice in the Shanghai Suburbs"]

[Text] Paddy rice is the major food grain crop of the Shanghai suburbs. During the recent 3 years, the sowing area has averaged 4.88 million mu a year, constituting about 66 percent of the sowing area of food grain crops, total yield has averaged nearly 3.5 billion jin, constituting 73 percent of total yield of food grains. The area of early rice covers 1.78 million to 2.12 million mu, average per mu yield is 750 jin. The area of late season rice covers 2.5 million to 2.84 million mu, average per mu yield is 670 jin. The area of single season late rice covers 140,000 to 340,000 mu, average per mu yield is 808 jin. The major experience in the production of paddy rice in the Shanghai suburbs is as follows:

## I. Digging for Potential in Reforming the Planting System

The continued development of food grain production in the Shanghai suburbs is mainly realized by grasping the two links of expanding the multiple index of food grains and improving unit yield. During the 15 years from 1964 to 1979, because of state procurement of land and basic construction in agriculture, the area of food grain fields in the Shanghai suburbs decreased year by year, but the sowing area of food grain crops increased year after year. Both the total yield and the unit yield correspondingly increased. For example, in 1979, the total yield of food grains increased more than 30 percent over that of 1964. The per mu yield in ordinary years increased from 970 jin to 1,634 jin. During the recent 10 years, the multiple planting index of food grains remained above 240. This planting system is basically suitable for the Shanghai suburbs where there is less land and more people and where the degree of mechanization is high. Under conditions of ordinary years, high yields can be realized. But at some places, during the course of expanding the multiple planting index of food grains, objective conditions were neglected, suiting measures to local circumstances was neglected, and such neglect has brought some problems to agricultural production. On the basis of affirming the results of reforming the planting system and summarizing experience, we believe it is necessary to appropriately reduce the area of the triple cropping system practiced at communes and brigades where there is more land and less labor and where the burden upon the land and labor force is heavy.

## ii. Working on Varieties

The development of paddy rice production in the Shanghai suburbs and the increase in unit area yield are closely related to the continued use of new varieties. Practice shows that in the distribution of varieties, intermediate maturing and high yielding varieties should be grasped as the main varieties and early and late maturing varieties should be used as companion varieties. Take early rice as an example, in 1979, early maturing and especially early maturing varieties constituted only 10.2 percent of the sowing area, a decrease of 61.4 percent from 1973. Intermediate maturing varieties constituted 62.6 percent, an increase of 44.4 percent from 1973. Late maturing varieties constituted 27.2 percent, an increase of 17 percent over 1973. This fully utilizes the characteristics of intermediate maturing and high yielding varieties. The maturation time is more appropriate, the panicle shape is relatively large, the fruiting percentage is high, and the potential of the superior varieties themselves to produce increased yields is developed. For example, in Baoshan County in the past, some early maturing and especially early maturing varieties were used as early rice. The yield of early rice was relatively low. In recent years, intermediate maturing and high yielding varieties Zhong gan zao and Yuan feng zao were planted as a substitute and the yield greatly increased. In 1979, the per mu yield of early rice was 788 jin. But as intermediate maturing varieties further expanded, conflict between the season and high yields emerged. To solve this conflict, each locality is popularizing new techniques. One is popularizing the transplanting of intermediate seedlings with soil attached as a key measure for early rice. Transplanting of intermediate seedlings with soil attached benefits transplanting sufficient base seedlings. Live plants do not die, the developing plants tiller early, and seedbeds and work to make the beginning seedlings uniform can be conserved. The second is popularizing removal of branches and leaving the seedlings of late season rice in the seedbed. Removal of branches and leaving the seedlings of late season rice in the seedbeds can develop the superiority of early seedlings, correspondingly extend the vegetative growth period and the effective tillering period in the large fields, and these are beneficial to producing more panicles, large panicles and heavier grain weight. Generally, 300,000 basic seedlings are left per mu, sidedressing must be done in time, and at the same time, the fields must be cleared early to stimulate deepening of the root system and control ineffective tillers.

## iii. Establishing the Foundation by Cultivation of Seedlings

The main goal of cultivating seedlings of paddy rice is to increase the percentage of seedling formation and improve the quality of the seedlings so that there will be sufficient seedlings, the seedling age will be appropriate and the seedlings will be strong. During recent years, in face of the particular characteristics of the Shanghai suburbs where weather changes are great and the temperatures are low, seedlings of green manure crops and early rice have been cultivated under a canopy of thin plastic sheets on an overall and popular basis. In the triple cropping system, seedlings of early rice are cultivated by covering the seeds under flat covers in rotation or the seeds are covered by fertilizers, crushed green manure, or the seed grains are covered by soil. These measures can increase temperature and prevent frost, preserve temperature and resist disasters, and prevent damage by birds. These measures can assure early sowing in time and stimulate early maturation.

Practice proves using thin plastic sheets to cultivate seedlings and cultivating seedlings in exposed fields are not the same. According to surveys of the Pengbin Commune in Jiading County, the commune had a piece of land sown with Guangluai No 4 on 10 April 1979. Each mu used 80 jin of seeds. Because the seeds were covered with thin plastic sheets, the seedlings budded quickly, the seedlings were uniform, the quality of the seedlings were good. Inspection of the quality of seedlings at the time of transplanting showed the seedling height was 18.7 centimeters, the single plant had 4.8 green leaves, 66 percent of the plants had tillers, and of these, 32 percent had one tiller, 19 percent had two tillers and 11 percent had three tillers.

In addition, because the seedling age of the late season rice is longer, many communes and brigades insisted on keeping the seedbed full and used sparse sowing, appropriately lengthened the seedling age, and assured that the seedlings had a definite vegetative area, thus, the amount of growth increased, the vegetative body expanded, and the quality of the seedlings improved.

#### IV. Improving Fertilizers

Fertilizers are the food for plants. Rational application of fertilizers and scientific use of fertilizers are important measures to stimulate rapid growth of paddy rice during the early period, to assure stable growth during the middle period and to prevent early wilting during the late growth period, and to realize high and stable yields.

In building up fertilizers in recent years, we learned from the experience of Jiangsu and other places, insisted on using farm house manure as the main fertilizer and chemical fertilizers as the auxiliary fertilizers. We developed the use of farm house manure in a big way. We raised, accumulated, planted, created and transported fertilizers in a big way according to the characteristics of the Shanghai suburbs. Raising refers to raising hogs, cattle, sheep and domesticated fowl. Planting refers to planting winter green manure, summer green manure, "the three aquatic plants and one duckweed." Accumulating refers to accumulating cut green grass, collecting aquatic grass, and accumulating river mud. Creating refers to building fertilizer accumulation ponds to manufacture fertilizers. Transporting refers to the activity of going into the city to collect human waste and garbage. According to surveys, one cropping of paddy rice of a per mu yield of 800 jin requires an application of 30 dan of organic fertilizers of hog manure and 140 jin of chemical fertilizers, equivalent to about 40 jin of pure nitrogen (including hog manure). One hundred jin of rice grains consume about 5 jin of pure nitrogen. Chemical fertilizers in the Shanghai suburb are more abundant. Rational use of fertilizers and scientific use of fertilizers are very important. According to experiments in Baoshan County, 100 jin of ammoniawater were deeply applied in the soil, sprayed during irrigation on live plants and applied on the surface. The results showed the fertilizers evaporated most seriously after being applied on the surface. Loss was the greatest during drainage before transplanting. Spraying the live plants during irrigation resulted in less loss due to evaporation and drainage. The least amount of ammonia escaped from deep application in the soil and the effect of the fertilizers lasted the longest. Deep application in the soil produced increased yields of 5 and 15 percent over application by spraying live plants and surface application respectively.

#### V. Timely Prevention and Control of Diseases and Insects

The crop opening of double season rice is tight. The soil is submerged in water for a long time, favorable to the occurrence of diseases and insects that damage the crops. In recent years in the Shanghai suburb, *cnaphalocrocis medinalis*, *nilaparvata lugens* and sheath and culm blight of rice and head and neck blast of rice have occurred early and lasted for a long time. They attack fiercely and damage large areas. Although many active measures have been taken, a definite loss was still incurred. Each year, 100 million to 200 million jin of food grains have been lost. In 1980, because of abnormal weather, disease and insect damage were especially severe. But because of the attention of each level of leadership, the agricultural departments strengthened inspection and guidance, the enthusiasm of the plant protection personnel was fully developed, and disease and insect damage were basically controlled.

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C80: 4007/411

## BENEFITS OF COMPANION PLANTING OF HYBRID RICE REPORTED

Shanghai KEXUE ZHONGTIAN [SCIENTIFIC FARMING] in Chinese No 2 Feb 81 pp 20-21

[Article by Cai Shiyuan [5591 0013 0337] and Xia Yulong [1115 4416 7893] of Jiangsu Province: "Companion Planting of Hybrid Rice in Seedbeds; Late Crop Paddy Rice Produces High Yields"]

[Text] Paddy rice is our province's major food grain crop. The planting area covers over 40 million mu. The area of seedbeds of paddy rice covers over 5 million mu. These seedbeds partly belong to the last crop that is transplanted late. The season is delayed, management of cultivation is not good. Unit yield is low, and the fields have always been "fields that drag their feet." It is a weak link in efforts to increase unit yields. To make the late crop mature early and to make the late crop develop early and to concentrate on increasing unit yields, our province's Jiangning and Jiangdu counties began in 1977 to conduct experiments in companion planting of hybrid rice in seedbeds. After achieving success, the method was popularized over large areas throughout the province. In recent years, it has been popularized over more than 350,000 mu. Practice proves companion planting of rice is deeply welcomed by the broad masses. It mainly has the following advantages.

The First Is High Yield. Companion planting hybrid rice in seedbeds can change low yields to high yields, risky rice production is changed to assured rice production, beneficial to balancing increased yields. In 1980, the production brigade of Huangqiao Commune in Wuxian planted 67 mu of hybrid rice in companion in seedbeds, average per mu yield was 650.3 jin, an increase of 144.9 jin over that of the large fields of early rice planted after the fields were overturned early. The Taoli Brigade of Huangchuan Commune in Donghai County planted 2 mu in companion, average per mu yield was 943 jin, all producing an increase over the control.

The Second Is Separating the Time for Farmwork. Companion planting of hybrid rice in the seedbeds of late season rice is generally carried out at the end of June and during the first 10 days of July. Companion planting of hybrid rice in seedbeds of wheat crops is carried out at the end of May. Farm work is generally moved earlier by one month. The task of transplanting 20 percent of the seedbeds can be done earlier during the slack period before the busy season of harvesting and planting. This lightens the burden of the pressure of doing both tasks at the same time.



The Third Is Increased Yields and Increased Harvests. According to surveys of Danyang County, companion planting of hybrid rice uses 1.5 jin of seeds per mu, equivalent to 15 jin of seeds of ordinary rice varieties while late season rice uses 40 jin per mu. For each mu, a saving of 25 jin of seeds is realized. The entire county can conserve 350,000 jin of rice seeds. At the same time, interplanted rice does not require tilling under and controlling insects and management are relatively simple and require less work.

The Fourth Is Late Transplanting Becomes Early Transplanting, Beneficial To Double Increases of Rice and Wheat. According to surveys of Wuxian, hybrid rice planted in companion in seedbeds of late season rice generally matures about October 15, 7 days earlier than early rice planted in fields that have been turned under early, 15 days earlier than intermediate geng and intermediate nuo rice, and over 20 days earlier than late geng rice. Because paddy rice matures earlier, an earlier crop opening is thus provided for autumn sowing. This is beneficial to timely and early sowing of the three wheats, beneficial to the growth of winter green manure, and beneficial to producing high yields of food grain crops of the entire year.

Companion planting of rice in seedbeds can produce increased yields mainly because the method of interplanting and companion planting is used. The plants are sown early and transplanted early. The season is right, and the period of vegetative growth is extended, thus the accumulation of nutrients is increased. Spatial conditions are fully utilized, the rate of utilization of light energy is increased, the superiority of large panicles and the superiority of growth of the border plants of hybrid rice are developed. Therefore, as long as the techniques and operating procedures are correctly grasped, generally higher yields can be realized. According to experience of each locality, the following aspects must be emphasized in the techniques of cultivation: 1. The width of the bottom soil of the seedbed must be appropriate. Row distance must be rational, generally the width of the seedbed is 1.8 chi, the width of the ditch is 6 to 8 cun. 2. Basic seedlings must be sufficient. Each mu should have 15,000 holes planted and should have 50,000 to 60,000 basic seedlings. 3. Superior combinations with strong tillering strength, high percentage of panicle formation, relatively long vegetative growth period, relatively large panicle shape should be selected and used. 4. The symbiotic period should be appropriate, generally, the symbiotic period is 25 to 30 days. 5. Management should be timely to promote double development to seize high yields.



## GENG RICE VARIETY HUXUAN 19 DESCRIBED

Shanghai KEXUE ZHONGTIAN [SCIENTIFIC FARMING] in Chinese No 2 Feb 81 pp 14-15

[Article by Ding Changling [0002 2490 7881] of the Shanghai City Academy of Agricultural Sciences: "Geng Rice Variety Huxuan 19"]

[Text] Huxuan 19 is bred from the single panicle selected from Nongken 58 by line selection and breeding in 1962 at the Shanghai City Academy of Agricultural Sciences. For over 10 years, it has been propagated and planted in southern provinces covering several million mu in area. At present, it is still the major propagated variety in our nation's southern rice regions. As a single season late rice of late season rice planted in regions of medium fertility, it manifests early maturation, produces stable yields, the quality of rice is good, the percentage of rice is high, and the plants have wide adaptability. As late season rice and last rice crop in regions where the frequency of low temperatures is high, it can also produce good harvests.

## Growth Characteristics

1. Its growth period is short and its growth is rapid: Huxuan 19 planted as single season late rice in the Shanghai suburb generally is sown between the last 10 days of May and the first 10 days of June and matures during the middle and last 10 days of October. Its entire growth period is about 145 days. As late season rice, it is generally sown during the last 10 days of June and matures at the end of October or the beginning of November. The entire growth period is 130 to 135 days. Although the sowing times at various localities in the south differ relatively widely, the difference in heading times is relatively small. This shows that this variety has a fairly stable growth period (heading time) at various localities. Early maturation, stable yield and short growth period are important characteristics of Huxuan 19. Therefore, some people have advocated that Huxuan 19 belongs to the intermediate geng type, but because its seedling age is very flexible, as a late season rice of the last crop, the seedbed period can be extended to over 50 days without surpassing the seedling age, while the seedbed period of ordinary intermediate geng rice rarely surpasses 45 days. Therefore there are also some people who advocate that Huxuan 19 belongs to the late geng type. The variety is not sensitive to light and temperature.

Huxuan 19 has an appropriate growth during the early period. After jointing, its growth is relatively rapid. According to observations, the growth rate from jointing to panicle bearing averages about 0.8 centimeters a day, faster than that

of Jianong 15 by 12.5 percent and faster than that of Nonghu No 6 by 38.7 percent planted under the same conditions. Because extension of the internode is fast, the plants easily lodge. This is a problem that should be noticed in management of cultivation.

2. There are more effective panicles and the yield is stable: The growth and death of tillers of Huxuan 19 basically retain the characteristics of Nongken 58, manifested as prosperous tillering, stable peaking, slow reduction, and plenty of effective panicles. When cultivating strong seedlings and when transplanted in a timely manner, as a single season late rice, the number of effective panicles per mu can reach over 250,000, each panicle has over 70 full grains and per mu yield is about 900 jin. As late season rice, the number of effective panicles is about 350,000, each panicle has 45 full grains, per mu yield is 800 jin.

3. The leaf surface area increases rapidly and photosynthesis is strong: During the period from jointing to panicle bearing, the leaf area of each plant of Huxuan 19 increases an average of 5.5 square centimeters a day while that of Jianong 15 and Nonghu No 6 is generally only 4 square centimeters. The fast increase in the leaf surface area is due to differences in the emergence and growth of leaves and the following three factors: The first is the proportion of distribution of photosynthetic products in the leaves is large, about 45 percent. That of Nonghu No 6 is 43 percent, and that of Jianong 15 is only 40 percent. The second is the leaves are thin. Each square centimeter of leaf area of Huxuan 19 weighs 3.5 to 3.8 milligrams, the boot leaf weighs 5 milligrams. That of Jianong 15 weighs 4.5 to 5.2 milligrams and the boot leaf weighs 5.4 milligrams. That of Nonghu No 6 weighs 4.2 to 4.9 milligrams, the boot leaf weighs 6.1 milligrams. The third is the life of the leaves is long. From panicle bearing to the beginning of the waxy ripe period of Huxuan 19, about one out of every 100 leaves die per day, while 2.5 out of every 100 leaves of Jianong 15 die per day.

4. Rate of filling is fast and the economic coefficient is high: The net photosynthetic production rate from panicle bearing to the waxy ripe stage of Huxuan 19 is relatively high. The net production of dry substances per square meter of leaf surface area per day is 3.04 grams, higher than the 2.25 grams per day produced by Jianong 15 by 26 percent, and about the same as the 3.19 grams produced by Nonghu No 6. But because photosynthesis is strong, the cumulative dry substance per mu weighs 31.5 jin more than that of Nonghu No 6. Therefore, Huxuan 19 has a faster filling rate. Full heading to maturation lasts 43 days, 1 to 3 days less than Jianong 15 and Nonghu No 6. After full heading, the synthetic dry substance constitutes 67.7 percent of the composition of the yield. The economic coefficient is 0.51, both higher than Jianong 15.

#### Techniques of Cultivation

1. Timely sowing: The appropriate sowing time of Huxuan 19 is determined by the whole growth period and the assured safe full heading time. In the Shanghai area planted as single season late rice, it is sown during the first 10 days of June, its seedling age is 30 to 35 days. As late season rice, it is sown June 20 to 25, not latter than June 28, its seedling age is 40 to 45 days. Transplanting before autumn will produce stable and high yields.

2. Cultivation of strong seedlings: Huxuan 19 has a short growth period and it is especially important to cultivate strong seedlings. Fields that have a loose texture, that are fertile, that have smooth water flow must be selected as the seedbeds. The soil layer of the seedbed must be level, shiny and muddy. Each mu should be sown with 100 jin of seeds, not more than 130 jin. After sowing, mud is used to cover the seed grains and exposed seeds are eliminated. When one leaf and one new leaf emerge, sidedressing should be timely applied to supplement nitrogen. During the three leaves stage, weaning fertilizers should be applied as sidedressing. Start-up fertilizers should be applied 3 to 4 days before jointing.

3. Small plants in dense plantings: Huxuan 19 has small panicles, tillering is strong, the percentage of panicle formation from tillers is high. Dense planting of small plants is the most appropriate. As single season late rice, each mu should have 25,000 holes, each hole should have 4 to 6 seedlings. As late season rice, each mu should have 30,000 to 35,000 holes, each hole should have 5 to 7 seedlings. For the seedlings of the last crop, each mu should have 40,000 holes, each hole should have 7 to 8 seedlings.

4. Strengthening management of fertilizers and water: The internodes of Huxuan 19 extend quickly. The stems are thin and weak and easily lodge. Grasping medium level fertility will produce stable yields and during the jointing period, the fields should be cleared. Huxuan 19 should not be planted in low marshy fields where water easily accumulates and where water does not permeate the soil when the field is cleared.

In addition, because Huxuan 19 has been planted for many years, the characteristics of the variety have degenerated. At some units, mechanical mixing has become more serious. Selection and retention of the variety and purification should be strengthened.

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## CONFERENCE ON SUMMER SOWN WHEAT HELD

Taiyuan SHANXI RIBAO in Chinese 20 Apr 81 p 1

[Article by Ding Ning [0002 1380] and Xue Linsuo [5641 3810 6956]: "Develop the Advantages and Avoid the Shortcomings to Open Up New Ways to Increase Yield; Ecological and Physiological Conference on Summer Sown Wheat Is Held At Yuci"]

[Text] Recently, the preparatory group of the Ecological Research Center of the Chinese Academy of Sciences and the Shanxi Provincial Academy of Agricultural Sciences jointly held an ecological and physiological conference on summer sown wheat at Yuci City attended by scientific and research departments of agricultural sciences academies (institutes) and agricultural colleges and schools of 11 provinces, cities and autonomous regions of Beijing, Shandong, Shanxi, etc. The conference engaged in academic exchange of ecological and physiological research results, experiments and demonstrations conducted at our province's various localities and in some sister provinces. Praise was given to the progress obtained in our province's research in summer sown wheat.

The conference invited some renown experts and professors nationwide to present academic reports on ecological physiology. At the conference, 15 comrades spoke.

It can be seen from these reports that besides winter wheat and spring wheat, summer sown wheat has a bright future for development in our nation. Especially in the northern provinces, winter wheat and spring wheat frequently produce drastically reduced yields because of the unfavorable weather conditions of severe cold and drought and dry hot winds. The experience revealed by the delegates from various localities at the conference further proves that in mountain and hilly arid regions above 1,000 meters above sea level, the soil is relatively infertile and there are no conditions for irrigation. Development of summer sown wheat production can fully utilize natural conditions of abundance of rain in summer, sufficient sunshine, high temperature and high humidity. The advantages can be developed and the shortcomings can be avoided. The superiority of the weather, the time and land can be developed to achieve the goal of increasing the wheat yield. It can be seen in the comparison of the yields of various localities that the yield of summer sown wheat is generally higher than winter wheat, generally an increase of about 30 percent. Summer sown wheat can increase unit yield and can also be used as a crop to increase the multiple planting index. It will serve a definite function in increasing the total annual yield. Some delegates also pointed out that in most of the regions of our nation at present, there are more occurrences of damaging weather. Summer sown wheat can be used as a relief crop. It can generally produce an increased yield of more than 50 percent over that of buckwheat.

## BRIEFS

RESULTS OF SCIENTIFIC AGRICULTURAL TECHNOLOGY--With the cooperation of concerned departments, Taiyuan municipality's agricultural front conscientiously popularized advanced scientific agricultural techniques and achieved good results in the field of scientific farming. Per unit area yield of hybrid rice set a record for our country's northern section. Hothouse tomato yield per mu reached the level of the world's advanced ranks. The four areas in the municipality which had hybrid rice fields in 1978 increased these hybrid rice fields to 8720 mu in 1980. Already 566 head of high-grade beef cattle have been produced from crossing fine, imported foreign beef breeds with local yellow cattle. [Text] [Taiyuan SHANXI RIBAO in Chinese 22 Apr 81 p 1]

CSO: 4007/444

XINJIANG

BRIEFS

BABY ANIMALS--Ili Prefecture, Xinjiang Autonomous Region, had an additional 1.5 million baby animals this spring season, some 110,000 more than the same time last year. All the prefecture's 4.12 million adult animals had safely tided over the winter. [Urumqi Xinjiang Regional Service in Mandarin 1300 GMT 7 Jun 81]

CSO: 4007/459



## BRIEFS

**RAPSEEDS PROCUREMENT**--By 5 June Zhejiang Province had procured 190.96 million jin of rapeseeds, more than double the amount procured during the same period last year. This year is the fourth bumper harvest year in the province's rapeseed production since 1978. During the 4 years starting from 1978, the province increased rapeseed output by more than 1,143 million jin, with the annual growth rate averaging 156 percent. The province's rapeseed output this year is expected to exceed 600 million jin. [Hangzhou Zhejiang Provincial Service in Mandarin 0400 GMT 13 Jun 81] By 10 June, Zhejiang Province had procured 345.93 million jin of rapeseeds, fulfilling the target by 123.55 percent and topping the same period last year by more than 213 million jin. This is a record. [Hangzhou Zhejiang Provincial Service in Mandarin 1040 GMT 13 Jun 81]

CSO: 4007/459

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TITLE: "Experimental Culture of Newcastle Virus I Vaccine in Duck Embryonic Cell"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 1, 81 pp 2-6

ABSTRACT: Chick Newcastle I attenuated vaccine has been in use in China for the prevention of chick Newcastle disease for many years and the effect has been great, but as chick fiber cells are used to produce the vaccine, certain chick diseases, such as leukemia, infectious bronchitis, etc. are found to be transmitted through the vaccine. A heterogenic vaccine is, therefore, in urgent need, so long as the difficulty of establishing a domestic chick line free of any specific disease exists. This paper reports an experiment of culturing chick Newcastle I vaccine in duck embryonic cells. Results of 3 months of experimental propagation proved that after 2-3 generations, vaccine of relatively high toxin value may be obtained in this manner and a portion of the products has reached the regulation standard.

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TITLE: "Investigation of a New Parazoon Pathogen of Swine High Fever Disease"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 1, 81 pp 42-43

ABSTRACT: There have been 2 opinions concerning the swine high fever disease: a chronic swine cholera or a form of toxoplasmosis, but neither theory is totally convincing. In the past decade, high fever disease of pigs that is resistant to penicillin is usually regarded as toxoplasmosis, and mistakes occur very frequently. A survey by the author and colleagues in the past 2 years in areas of swine high fever disease disclosed total absence of toxoplasmosis. In the tissue cells of diseased pigs, a new parazoon is invariably discovered. Close examinations of this parazoon and toxoplasma revealed that the two are very different in morphology, ecology, and taxonomy. Observations of the life history, the formation of spore sac in all types of organs, and its multi-generation sporogenesis indicate that this parasite should be more properly regarded as a protozoon of the Class Sporozoa of the Phylum Protozoa. Future studies are awaited to determine its relationship and difference with respect to toxoplasmas.

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TITLE: "Report of Experimental Treatment of Ovarian Diseases of Large Domestic Animals With Yanghongtan (*Pimpinella thellungiana* wolff)"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 1, 81 pp 47-49

ABSTRACT: Clinically, the expression of ovarian diseases in domestic animals is the absence of oestrus. A survey in Baishui and Chengcheng Counties indicates the incident to be 17.7 to 63.5 percent, about 30 percent in dairy cows. In the past 4 years, the authors carried out an experiment of estrinization with Yanghongtan, a perennial herb. For the experiment, the whole plant is dug up, dried, and ground into powder before fed to the diseased animals which are selected from various farms of various areas of Shaanxi and a rate of effectiveness of 66.7 - 90.8 percent has been observed. Further investigation is needed to resolve problems concerning the active element of the herb, the dosage, method, and duration of treatment, etc.

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TITLE: "Experimental Research on the Influence of Inulin on Immune Responses of Pigs and Chickens"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 2, 81 pp 1-4

ABSTRACT: The fact that the injection of certain chemicals can induce an increase of immune reaction of the body has often been reported, by Johnson, Pillemer, etc. ZHENG Houjing [6774 0624 2468] et al had proved that inulin is active in promoting the formation of agglutinin antibody in domestic rabbits. All these reports concern the use of small experimental animals to prove the action of polysaccharides in increasing the body's immune reaction, however. For the purpose of clarifying the effect of inulin on the immune reactions of pigs and chickens, the authors made some experimental observations. Positive actions of inulin in influencing immune reaction and the formation of antibodies and in the formation of agglutinin in the blood in case of experimental chick Newcastle disease and brucellosis of piglets are observed. Further studies on the mechanism of inulin and similar substances in strengthening the body's immune responses are awaited.

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TITLE: "New Technique of Surgical Restoration of Complete Prolapse of Uterus of Sows"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY]  
in Chinese No 2, 81 pp 63-64

ABSTRACT: The supravaginal approach for the restoration of total prolapse of uterus in sows is a new technique created by the author. The technique is simple and causes very little injury to the diseased animals. Contamination from urine and uterine discharge is not likely and the incision heals easily. After healing, health and normal reproduction are assured. Presurgical preparation and the entire surgical procedure are described.

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TITLE: "Research on the Immune Method to Equine Babesiasis--Method of Producing Immunization with Hip Muscle Injection of Taipan [Terpine ?] Blue When the Horse Begins to Have Fever and Monomorphic Parasites Appear"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY]  
in Chinese No 3, 81 pp 2-5

ABSTRACT: Based upon the fact that equine babesiasis occurs once a year in the spring to persist for a period of one and half months, a method is devised to produce immunization in horses by hip muscle injection of Taipan blue. Once a day the body temperature of horses is tested, before the appearance of the vector--ticks--and microscopic examination of smears is immediately carried out if fever is discovered. If monomorphic parasites are observed, Taipan blue is injected in points of the hip muscles. Experiments with herds of 390-502 horses in 1967, 68, and 70 demonstrate that the technique produces immunization in horses in the sense that the immunized horses will develop no symptoms of babesiasis without any side effect.

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TITLE: "Technique of Urethrostomy to Cure Urethral Lithiasis of Steers"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY]  
in Chinese No 3, 81 pp 47-48

ABSTRACT: In the past several years, amuria due to urethral lithiasis has occurred frequently among male domestic animals of Shuo County, especially among steers. Results of treatment with Chinese traditional drugs and injection of antiinflammatory and diuretic drugs are not very satisfactory. When the disease is not controlled, death from uremia or even bladder rupture is often the result. The author and colleagues adopted a new technique of urethrostomy through an incision at 3 cun below the anus. With this technique, the health of the animal is quickly restored without the need of removing the stones from the curvature. This surgical procedure is described.



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TITLE: "X-ray Diagnosis of Sheep Pulmonary Hydatosis"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY]  
in Chinese No 3, 81 pp 5-10

ABSTRACT: The authors carried out chest x-ray examinations of 847 sheep of 4 herds of different regions and produced 109 cases of pulmonary hydatosis, amounting to a 12.86 percent rate of diagnosis. This paper gives a detailed discussion and analysis of the x-ray characteristics of sheep lung hydatosis. Ten of the sheep diagnosed to be diseased by x-ray are tested for Casoni's intradermal abnormal reaction and 17 diseased sheep are dissected for pathological examination. Findings of the 27 sheep basically confirm the x-ray observations. The authors, therefore, conclude that x-ray may be used to examine large herds of sheep to produce quick and accurate diagnosis of lung hydatosis, if it is combined with other forms of diagnosis.

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TITLE: "Examination of Virus Contamination of IBRS<sub>2</sub> Swine Kidney Cell"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY]  
in Chinese No 4, 81 pp 2-7

ABSTRACT: IBRS<sub>2</sub> swine kidney cell was successfully produced by the Brazilian Institute of Biological Research in 1964. That cell is sensitive to foot-and-mouth disease virus and may be used to make vaccine. It was first introduced to China in Oct 74 from the Institute of Veterinary Research of Italy, but the accompanying booklet does not indicate the number of generation. In Dec 78, it is again introduced from Pirbright Research Institute of Animal Virus of England with a booklet clearly stating it to be the 180th generation of the Brazilian cell. In China, following the success of the Center of Veterinary Drug Inspection, the Chengdu Veterinary Bio-pharmaceutical Plant, the Lanzhou Veterinary Drug Plant, the Xinjiang Institute of Veterinary Medicine, and the Lanzhou Institute of Veterinary Medicine of Chinese Academy of Agricultural Sciences all succeeded in making vaccine with this cell. Beginning in 1976, in cooperation with related organizations, the authors proceeded with cell carcinogenesis, cell chromosome, and contaminating virus examinations. This paper is a combined report of these studies.

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TITLE: "Pathological Study of Acute Hemorrhagic Necrotic Colonocecitis of Horses and Mules"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 4, 81 pp 13-16

ABSTRACT: Acute hemorrhagic necrotic colonocecitis of horses and mules may occur abruptly and the disease advances very fast to cause death in a very short time. There are numerous foreign reports of a similar disease but due to the fact that its pathogenesis is not clear there is no way to determine its pathological characteristic accurately. The institute established a research group to study its prevention and treatment in 1971. Through several years of survey analyses and clinical practice, it is preliminarily concluded that it occurs under a given induction action of the external environment causing an imbalance of the intestinal colony of microbes. The direct cause of death is a massive multiplication of *Bacillus coli* which invades the blood to bring about endotoxic shock. Findings leading to this conclusion are reported.

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TITLE: "Survey Report of Abrupt Bovine Smallpox of Dairy Cows"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 4, 81 pp 25-28

ABSTRACT: At the 81 Brigade of Fenghuang Mountain Animal and Horticulture Farm of Chengdu City, a disease of smallpox-like eruptions occurred to the dairy cows mainly on the skin of the breasts from 28 Nov 79 to 10 Feb 80. About 69.9 percent of the cows were involved, and of the 52 milking workers, 21 were infected also, amounting to a rate of 40 percent. Not a single one of the calves and bulls was infected, however. Details of the incident, including the symptoms, rabbit inoculation data, and pathohistological examinations, are reported and discussed.

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